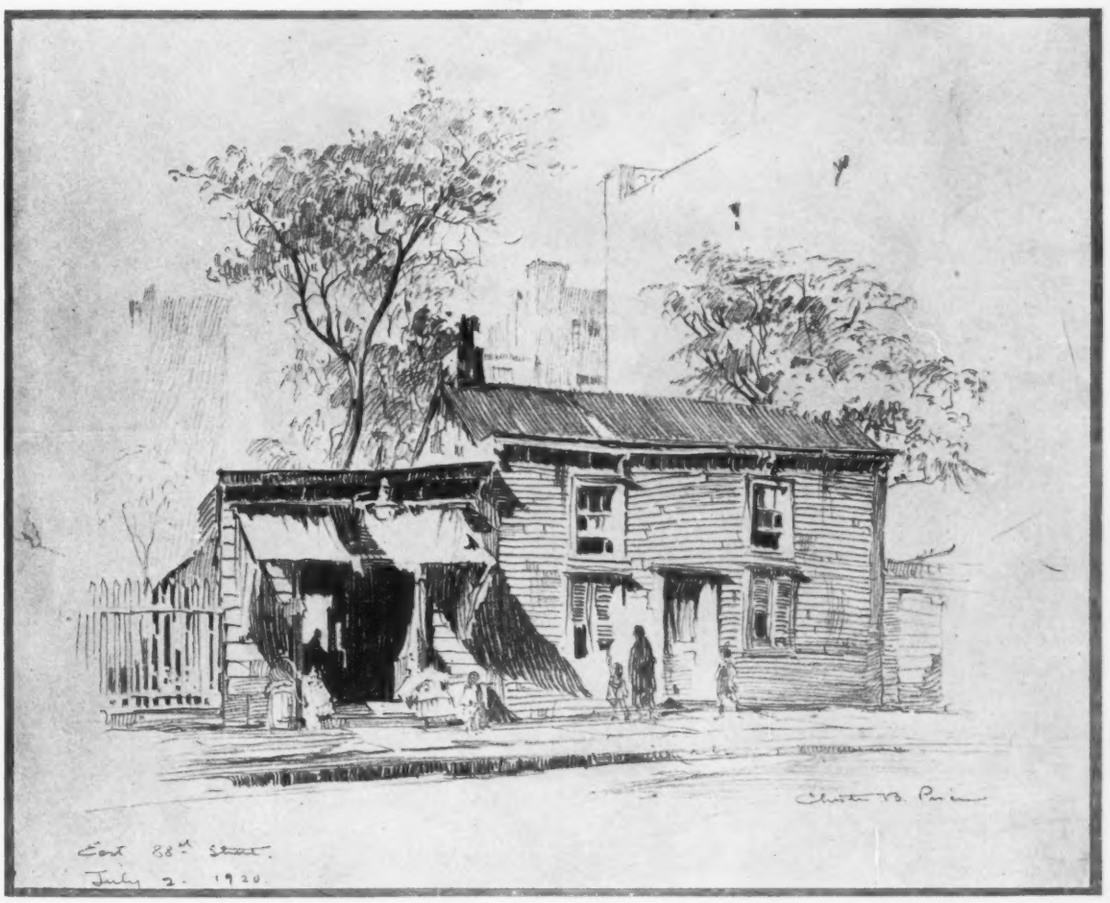
DEC 1 1 1923

Architectural Library

PENCIL POINTS

Registered U. S. Patent Office

A Journal for the Drafting Room



Pencil Sketch by Chester B. Price
Old House on East Eighty-eighth Street, New York City

DECEMBER 1923

VOL. IV
TWO DOLLARS
A YEAR

Published Monthly by
The PENCIL POINTS PRESS, Inc.
Publication Office—Stamford, Conn.
Editorial and Advertising Offices—19 East 24th Street, New York

NO. 12
25 CENTS
A COPY

Entered as second-class matter September 7, 1920, at the Post Office in Stamford, Conn., under act of March 3, 1879

In This Issue:—The Technique of Rendering by Francis S. Swales; The Sketch Problem, by John F. Harbeson; Design in The Drafting Room, by John C. Breiby; Drafting Stone Work, by J. R. S. Scott. Plates:—The Erechtheum, Photograph by Frederick Boissonnas; Photograph of Gothic Detail; Etching by D. Y. Cameron; Pencil Sketch by Samuel V. Chamberlain. Index to Advertisers, Page 18

The 32-story Straus Building, Chicago Graham, Anderson, Probst & White, Architects

Another Progressive Step in Building the Nation Securely

Convincing proof of the merit of Indiana Limestone lies in the fact that S. W. Straus & Co., who have had forty-one years' experience in financing building construction, have selected it for their new business home in Chicago.

Our handsomely illustrated booklet on bank building will be sent free upon request

Indiana Limestone Quarrymen's Association, Box 784, Bedford, Ind.

Service Bureaus in New York and Chicago

INDIANA LIMESTONE
The NATION'S BUILDING STONE

PENCIL POINTS

VOLUME IV DECEMBER 1923 NUMBER 12

A COMPLETE BODY OF ARCHITECTURE

WHEN Isaac Ware chose the quaint title for his book "A Complete Body of Architecture" he gave currency to a phrase that stirs the imagination. How much it means! The expression of human life throughout the ages since the dawn of civilization, the satisfying of human needs, the facilitating of human progress through the art of building. A compound of Art and Science, the co-ordination of the psychic and the intellectual, from which spring creations of stone, cement, steel and burned clay that are infused with life. And each building is in the line of traditional descent, for "all life is from life" in art as it is in nature, despite the blind, self-deception of the occasional proponent of complete originality in design.

Conceived in the spirit of the architect, the design represents his reaction to the problem presented and it receives from him its heritage, a part of what he *is*—his mentality, culture, sensitiveness to beauty, and to the spiritual side of life. It partakes of his physical vigor and his courage. All these things are shown forth in the materialization of the design.

Should not the realization of this fact be the strongest incentive to self improvement on the part of every man who has chosen to participate in the creation of architectural work. His weaknesses and his lacks stand exposed in his work, to his shame, while his strong and good qualities are made evident to his honor.

Since the term "the architect" includes, in the case of every important building operation, the members of the organization as well as the architect himself, what has been said above applies to thousands of men who contribute to the creation of architecture as staff members—draftsmen, designers, specification writers. The quality of the men of the organization is reflected in the quality of the work of the office, what a man puts into his work is not lost, though the man in the street may not hear of him. First of all his "Boss" knows, and his associates in the office know. But most important of all *he* knows and he gains development through doing good work. The man who goes through exercises in an indifferent way never gains much in physical development, but the chap who throws himself with interest and vim into whatever he is doing, gains in strength. A man may well work for years unknown, his identity merged in that of his organization, if he is gaining in development. If a man is merely going through the motions, working perfunctorilly, he is losing his time, and life is measured very sharply in terms of time. If he is working in such a way that he is developing, he will find that he is gradually being given command and that with his increased power is coming the opportunity to express himself through others who are associated with him. In due time he will be fit to head an organization *if* he has the right material in him.

"A Complete Body of Architecture" would cover infinitely more today than the same title covered in the time of Isaac Ware. Though the traditional and historical aspects of the subject are very much the same today as they were then, the practical requirements are much more numerous and complex; for example, the requirements of a great modern hospital, railway terminal, or hotel.

Also the materials of construction and methods of building show a wide departure from Isaac Ware's day. The modern steel frame building with its plumbing, heating and ventilating and elevator equipment is a striking example of the change that has taken place in this respect.

These changes in materials and methods have come about very largely through the necessity for meeting modern conditions and, as a result, the architect of today has at his command materials, methods and equipment that place him in a position that is highly favorable as compared with that of the earlier architects. These changes have also given the architect much more to learn and the continued development in the construction and equipment of buildings makes it necessary for him to keep himself informed of the progress that is constantly being made, and for this information he is dependent upon advertisements and literature prepared by the various manufacturers.

Since modern architectural work has become so complex on the practical side, the preparation of specifications has assumed a place of great importance, a fact that PENCIL POINTS has recognized in the publication of the "Specification Number" last January and in the publication of the monthly department, "The Specification Desk."

Present-day conditions have created other problems that will be discussed in our next issue, which will be a special number, devoted to the subject "Office and Drafting Room Practice."

A feature of the January Issue will be a symposium to which you are invited to contribute a letter expressing your views or describing some method of office management or drafting room practice.

Figure 27. Competition Design for The Scott Memorial Fountain, Detroit, Mich. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.

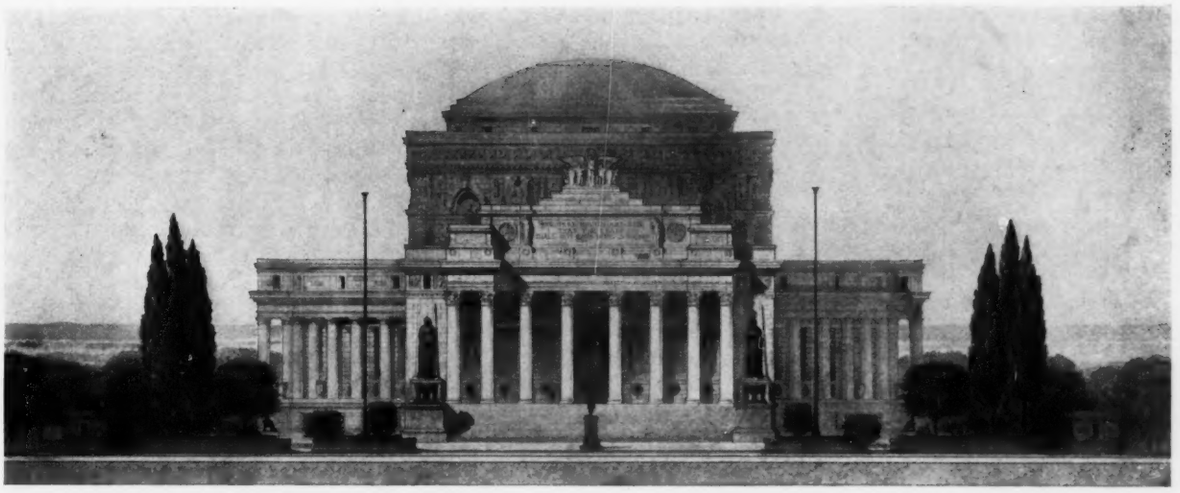


Figure 23. Competition Design for World War Memorial. Francis S. Swales, Architect.

THE TECHNIQUE OF RENDERING, PART IV.

BY FRANCIS S. SWALES

A QUESTION which often presents itself when considering rendering is whether to ink in the line work, leave it in pencil, or to leave it in pencil generally, but ink in such lines as seem to require special emphasis or strengthening to make them perform their proper part.

It is not a certainty that a drawing will be bettered artistically, or technically, by inking in. The purposes of inking in are to make the drawing less liable to damage by being accidentally rubbed; to enable it to withstand many washes, and to define more firmly than with a pencil line the limits of dark washes. It also permits a dirty drawing to be cleaned with a soft eraser. Many draftsmen find the use of the ruling pen a handicap to expression—more often due to the difficulties of making watered ink flow on rag-papers, and maintaining the right tone of ink, than to lack of skill with the instrument.

When plenty of time is available the working advantages and permanency of the inked-in drawing are worth taking into account. This is especially true with the student, or beginner, who may find it necessary to correct several of his washes by sponging out. Under which conditions the ink line will hold its own while the pencil line will require restoring. The disadvantage of ink lines is the tendency to overemphasize detail and cause harshness of effect if the line is a trifle too dark. Another is flatness and weakness caused by a line which is too pale in tone. When time is short, as is nearly always the case with competitions, the advantage of being able to leave the line work in pencil is inestimable. To be able to do so requires habitual cleanliness, precision and decision in workmanship in order to maintain a consistent and firm quality of line. Carelessness of drawing or of using trial lines means many small erasures. These will show as dark patches the moment the first wash is applied and will require restoration. Small erasures must be avoided with inked-in drawings too; but the inked-in drawing will stand a good general cleaning with a soft rubber which will take out trial, accidental lines, while the pencil drawing would be almost completely erased by the same treatment.

While it is customary to consider inked-in wash drawings rendered with the brush only, the aristocrat of methods—it being the most difficult, requiring the greatest amount of practice, patience and time—few of our present-day draftsmen are willing to forego easier and quicker ways of making clear the intent and modelling of the design. Everyone who has had the experience of making a rendered drawing of a domical building or round tower has learned the inadvisability of inking in the vertical or radiating stone joints without first determining upon a strong contrast between the circular mass and the background and whether the parts which are round in plan will be dark against a light background (Figures 23 and 24) or light against a dark background. (Compare Figures 20 and 21 in November issue.) It is always on the side of safety and expediency to adopt the former method when it is desired to show much detail upon, and also the general effect of, the curved surface to the elevation. Very slight variations of width of line will cause polygonal effect, or detracting from the surface of the mass. Lines which are too strong may cause the merging of the background with the shades or parts of the shadows, so that at a little distance the silhouette is destroyed and the curved surface lost in a maze of patches. Even though the remainder of the drawing be inked in it is best to leave all of the circular part in pencil until the wash

rendering is finished and perform the retouching with a sharp pencil rather than with ink. A very strong line is needed to define the silhouette of a dome or cupola whenever it is shown light against a dark background, and of any features, especially such as pediment, statuary, or portico in front of it. The amount of strengthening such lines require is always surprising. Make it two or three times as strong as seems necessary, while looking at the drawing board, then stand it up and look at it from a distance of eight to ten feet—and you will probably strengthen it at least once more.

The small illustrations, Figures 20 and 23, serve to compare carrying quality—that which enables the design to be judged without "smelling" it. Figure 21 is reproduced from the same drawing as Figure 20 and Figure 24 is from the same drawing as Figure 23. The cuts showing the actual size of the drawing serve to compare the technique. Figure 21 is the perfectly drawn ink line—which takes much time. Figure 24 is a pencil line drawing with a few of the finer horizontal lines inked in, but with the vertical and silhouette lines put in with a carbon pencil—note how they disappear in the general effect of the small Figure 23. When considering carrying effect, or reproduction at a smaller scale, it will help the beginner in the study of his drawing to use a lens known as a "diminishing glass."

The heavy outline is of especial importance to define a free standing colonnade, or portico, when much detail has to be shown of the wall behind (Figure 24). In such circumstances, to avoid eccentricities of effect in the columns themselves, flutings, if any, should be shown only in very fine hard lines and the columns be drawn thicker in proportion than they would be desired in actual execution of the design. The shade cast upon the columns requires to be very lightly indicated and when the representation of the column is three inches or less in height it is better to show them straight—that is, without entasis or taper. When the Corinthian Order is employed the capital is thus thickened sufficiently to allow a fair amount of drawing without becoming a black patch or merging into the background. It is inadvisable to ink in ornament upon drawings of less than one-eighth inch scale in any event, except outlines of free ornament, such as the capitals, statuary, etc. Certain of the lines such as those which cast the principal, and darkest, shadows may often be inked in with graded lines to intensify the grading of washes and add to the luminous effect or to hold the architectural lines firmly against shades and shadows which would otherwise break up important surfaces and destroy simplicity.

To assure simplicity and unity the silhouette cannot be too strongly insisted upon. It is probably due to the desire to emphasize such qualities that many draftsmen have resorted to the employment of dark backgrounds against which the building and entourage are shown rather as full-size representations of a small scale white model of the building than as a representation of the building itself. This type of representation (known as "the Acropolis stunt") is at its best when nothing but the architecture is shown; when, as with the Acropolis, the building is shown as though standing on a level rock—or the model upon a table—against a large expanse of sky, and without any softening introduction of foliage. This gives the "acid test" to the scale and composition of the architecture but is, therefore, suited only to judgment by experienced architects—actual designers.

The use of the dark background has called forth many clever technical tricks such as the imitation of the graded settling wash—which requires such infinite pains when spread with the brush—by the use of the air brush, and sparkling small mottlings of the large areas of background or foreground by use of the atomizer, or blower. Thus reducing the field of personal technique to the presentation of the building proper.

When one of these blowing instruments is to be employed the parts of the drawing to be reserved for brush work is covered by a template of paper and borders of tracing paper are "pinned" down (for fine drawings use needles) all around the sheet to preserve the white borders. Sometimes the principal shadows and the voids in the walls and any comparatively large space which requires a graded shading, are also put in with the air brush.

In the hands of a skillful operator the air brush can be made to produce wonderful luminous effects. An example of its use for the entourage in conjunction with very simple and beautifully graded washes for rendering the architecture is shown in Figures 25 and 26—Mr. Swartwout's design for the Wilmington Public Buildings, rendered by Mr. Otto Eggers. As a whole, considered simply as a drawing, and in point of showing technical skill and knowledge of how to execute each part, it is everything that could be asked. Certain facts of relative values of the designer's compositions are, however, overlooked. The few faults of the design are curiously exaggerated; and faults are made to appear which do not really exist in the design. Thus, the change of proportion of window voids in the projecting pavilions, from that of the main body of the building, are exaggerated by the sharp intensifying of the shadows and detail which cause them to appear narrow and deep, while the windows in the main body are so lightly rendered as to cause them to appear relatively wider, higher and of shallower reveal than is indicated by the lines of the drawing. It is difficult to discover, at a slight distance, much less to realize, the width of the projecting pavilions or the upper limit of their height at the plane of their projection. The two pyramidal roofs which in execution would be low points set back at the intersection of the masses of the building, serving to accentuate the change of direction, appear to project out to the face of the pavilions and cause a top-heavy effect. The hedge which so admirably sets off the balustrade and monumental ornaments, as well as adding brilliancy and a fine decorative line to the composition, as a drawing, reduces the

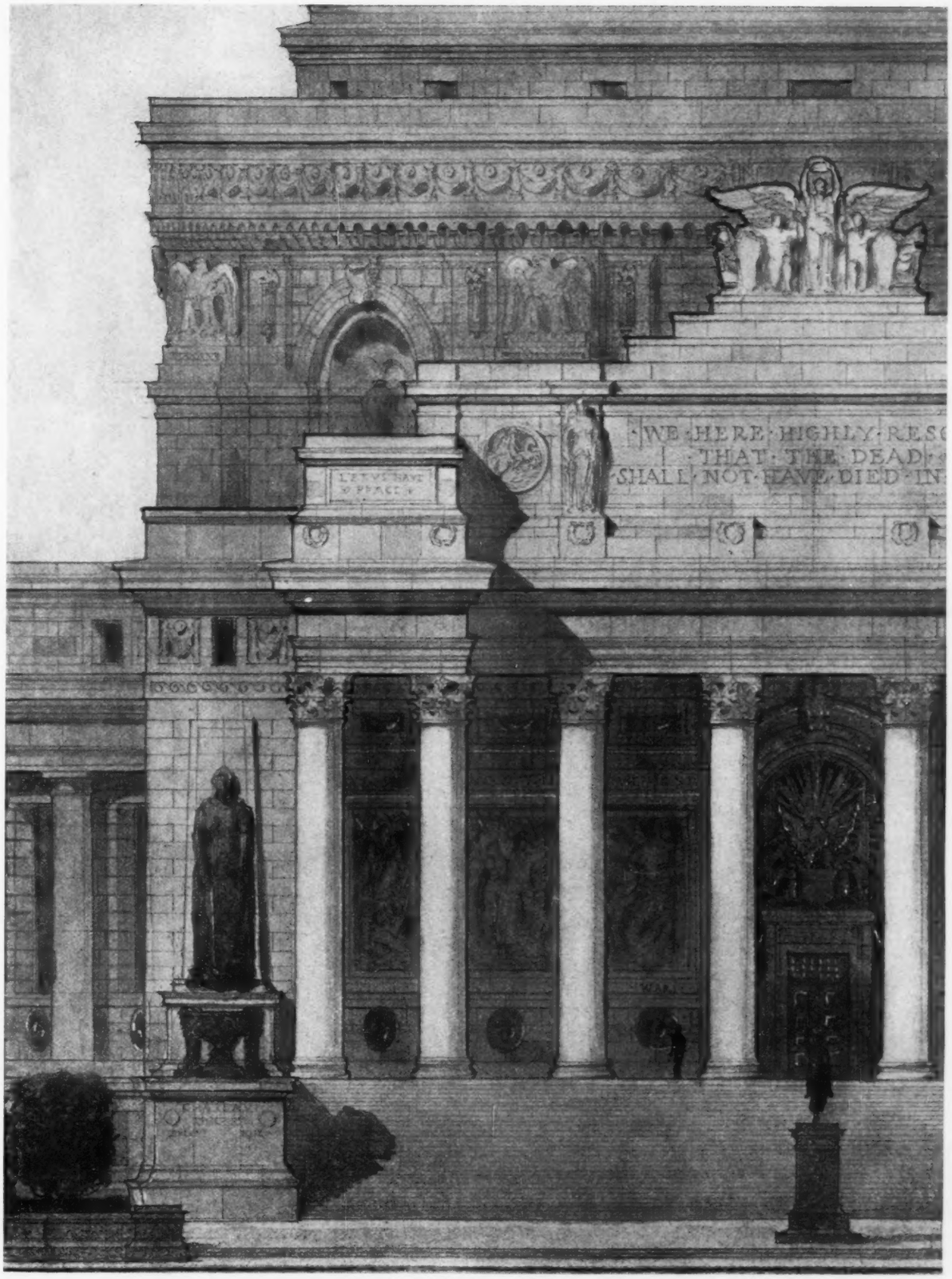


Figure 24. Competition Design World War Memorial. Detail of Figure 23 at Actual Size of Original Drawing. Scale 1/16 in. = 1 ft. Francis S. Swales, Architect.

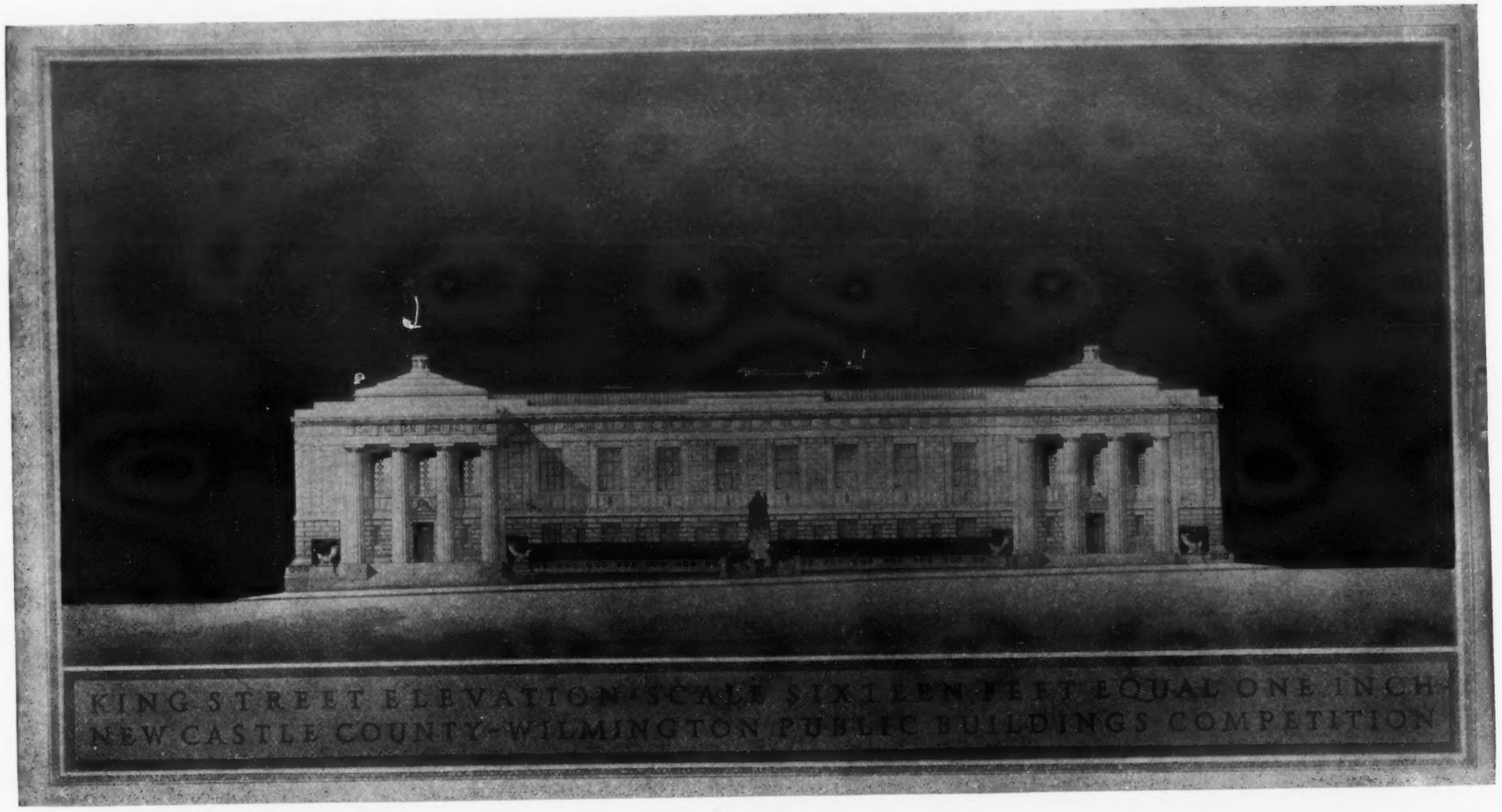


Figure 25. Competition Design for New Castle County-Wilmington Public Buildings. Tracy & Swartwout, Architects. Rendered by Otto R. Eggers.

Figure 26. Competition Design for New Castle County-Wilmington Public Buildings. Tracy & Swartwout, Architects. Rendered by Otto R. Eggers. Detail of Figure 25 at Actual Size of Original Drawing. Scale 1/16 in. = 1 ft.

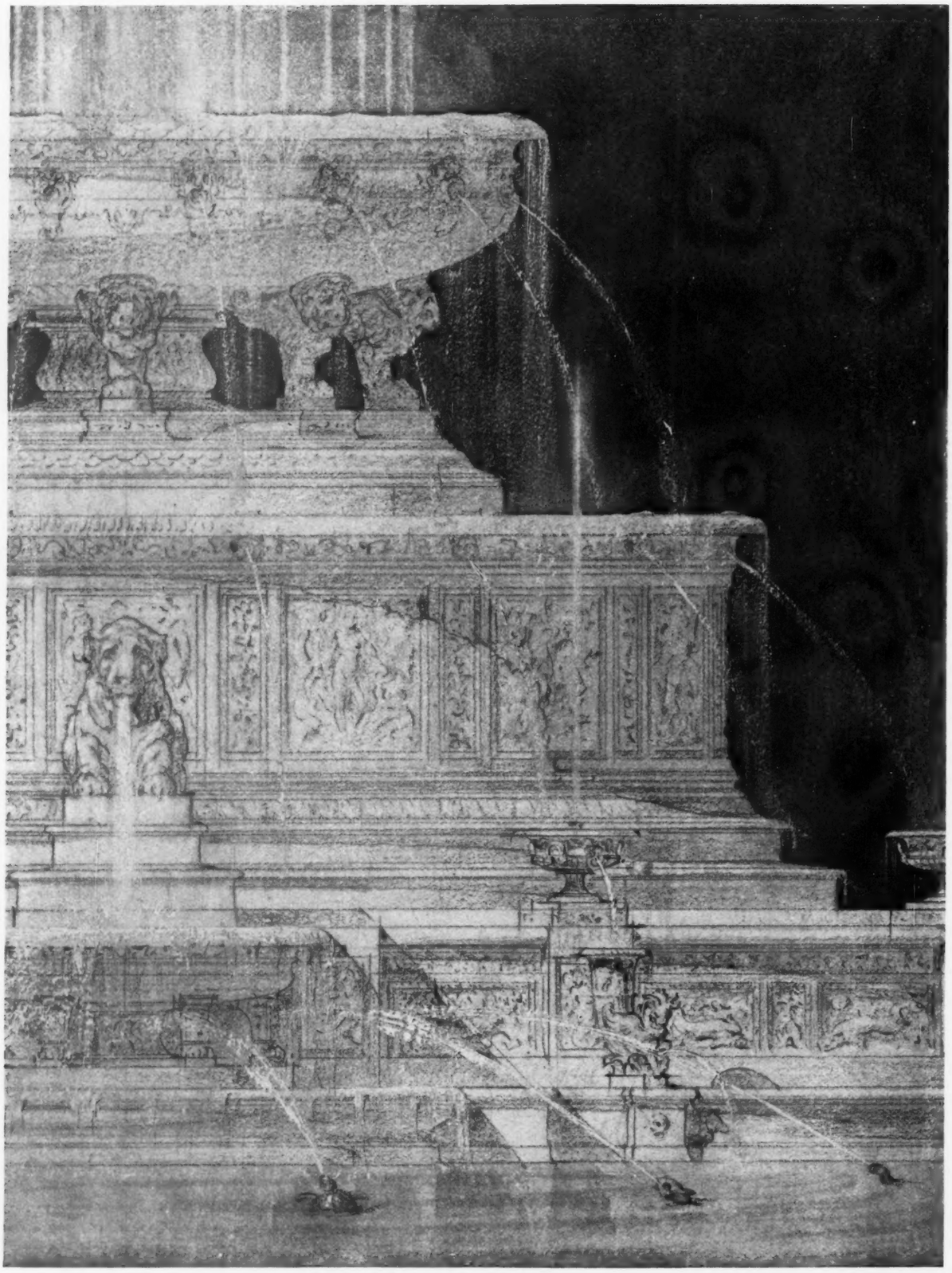


Figure 28. Detail of Figure 27 at Actual Size of Original Drawing. Scale 1/4 in. = 1 ft. Competition Design for The Scott Memorial Fountain, Detroit, Mich. Cass Gilbert, Architect.
Rendered by Thomas R. Johnson.

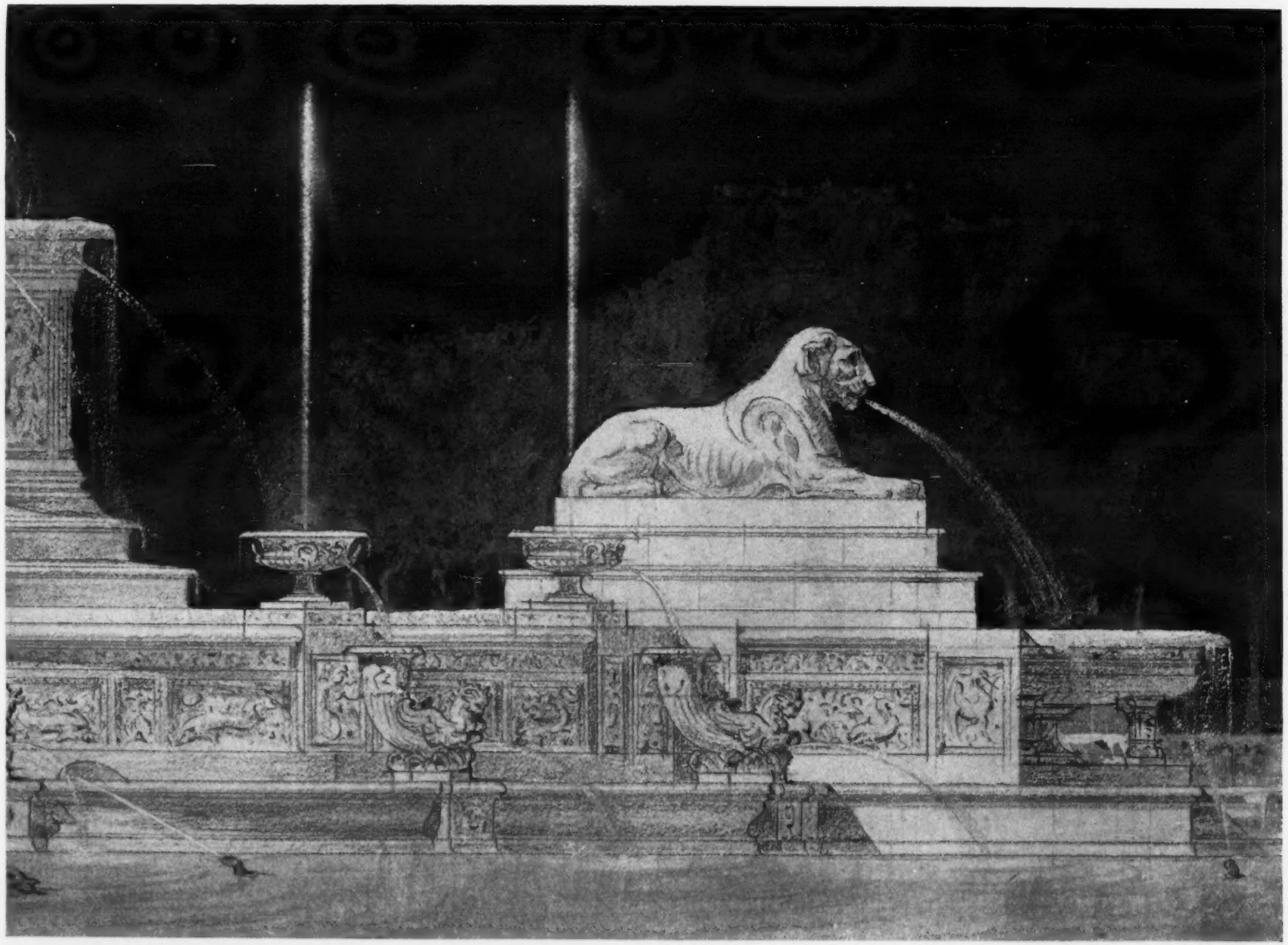


Figure 29. Detail of Figure 27. At Actual Size of Original Drawing. Scale 1/4 in. = 1 ft. Competition Design for The Scott Memorial Fountain, Detroit, Mich. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.

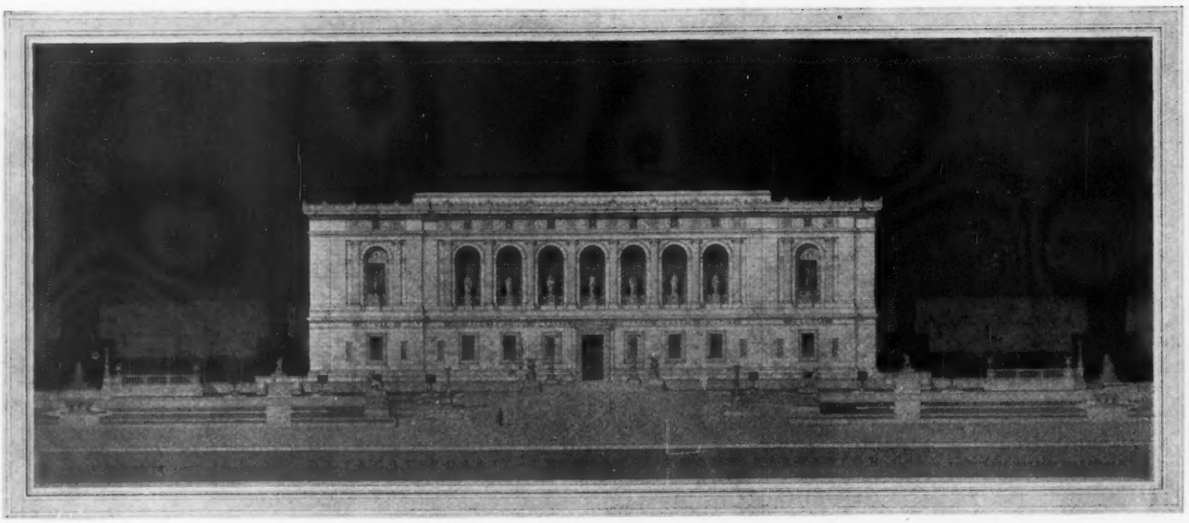


Figure 30. Competition Design for The Detroit Public Library. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.

effect of height of the ground story which, due to contrast, increases that of the upper story until it competes with the pavilions. This causes the columns of the pavilions to give the queer effect of having jumped down half a story. A strong outline around the projecting pavilions and a wash or two, over the main body of the building, and darkening of the window openings and shadows to same, would have helped give true as well as technically correct effect to the architectural design.

While the discussion of design and composition is perhaps beyond the scope of the title of these articles, no fine distinction can be made as to where fine technique leaves off and fine art begins. How much is due to knowledge? And how much to imagination? How much to reasoning; how much to intuition? How much is experience—how much experiment? An architect is an artist-designer, a designer is a draftsman and renderer. Rendering is the finished, though usually tentative, expression of the artist's conception. When designer and renderer are not the same the technique of the latter is a matter of deep concern to the former. In order to show the designer's ideas with the utmost faithfulness and completeness of detail the draftsman will often employ the finest and most delicate technique of which his hand and eye are capable. Many designers study their conceptions to the minutest details of effect allowed by the limitation of time, and the more scholarly the designer, the more apt he is to study with a fine hair-like line and indicate far more fine detail than should have any purpose in a competition—the main object of which should be to discover the architect with the best ideas, conceptions and solution of the large problem and composition.

When the scale of the drawing or that of the design is large enough, a good medium for the line work, affording some of the advantages of both the soft lead pencil and diluted ink, is the carbon or lithographer's pencil. It can be sharpened to, and will hold, a quite fine point and produce firm, strong lines that carry, or reproduce, as well as ink lines. Or the point may be dulled and be used like a soft lead pencil to indicate ornament and sculpture; and to shade flat washes into the effect of graded washes. An excellent example of such drawing is the elevation of Mr. Cass Gilbert's design for the Scott Memorial Fountain at Detroit (Figures 27, 28 and 29), drawn and rendered by Thomas R. Johnson. The drawing generally is conceived as the representation of a model; but the indication of water compels naturalistic presentation of that part of the design: the jets being complementary to the architecture in the conception of the whole.

A light toning wash of ivory black covers the whole of the rendered surface. The background is put in with three, dark, graded washes. The water jets are partly taken out with an ink eraser—used after the background had dried. The big central column of water is retouched with a thin wash of pale yellow tinted *gouache*. The small radiating jets are of Chinese white, rather thick, and put in with swift strokes of the brush which cause the white to break against the rough surface of the paper, giving much the same effect as the actual water jet breaking in the air. A very light tone of yellow is passed over the water in the forerground, and the ripples of the surface are made with long, swift brush strokes, retouched, very lightly, with carbon pencil. The principal shadows on the basins and over the panels of ornament are pale washes of ivory black with the merest suggestion of yellow in the tint. The shading, which is held darkest at the center and disappears towards the sides—thus leaving the parts against the background practically white—is done with carbon pencil, with a light, firm stroke which loses itself in the tone. The silhouettes of the principal mass of the fountain and of the free ornaments—the lions, vases, etc.—are retouched with a sharp, firm carbon pencil line.

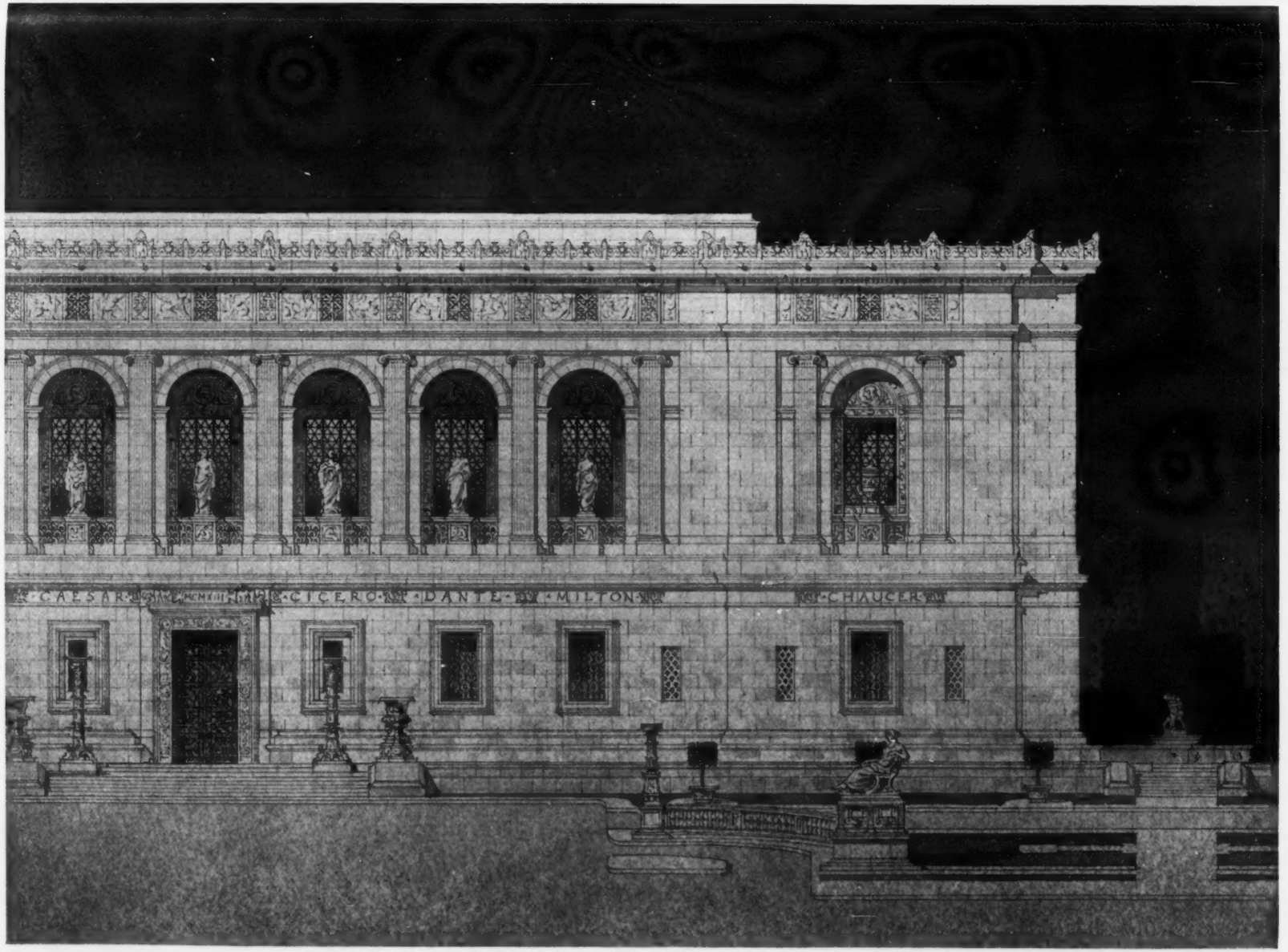


Figure 31. Detail of Figure 30. At Actual Size of Original Drawing. Scale 1/16 = 1 ft. Competition Design for the Detroit Public Library. Cass Gilbert, Architect. Rendered by Thomas R. Johnson.

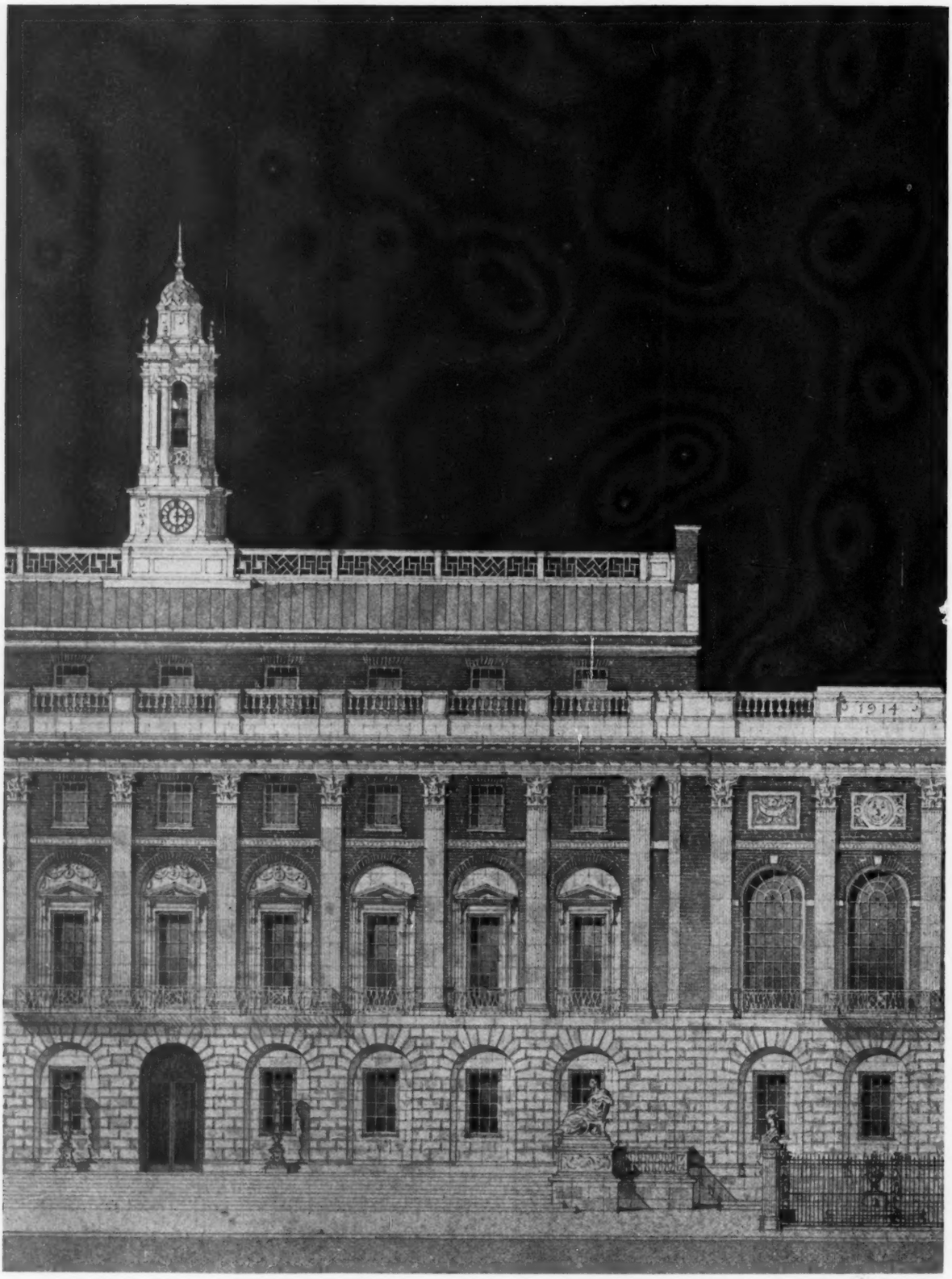


Figure 33. Detail of Figure 32 at Actual Size of the Original Drawing. Competition Design for The Waterbury City Hall, Cass Gilbert Architect. Rendered by Thomas R. Johnson.

The silhouette line of the upper edges of the bowl and upper stage of pedestal basins is made by the ragged edge formed by running two or more heavy washes up to the same line. Great artistic feeling is shown in the indication as well as in the rendering, both of which are in full sympathy with the character of design. Four very light grades of tone, becoming still lighter as they recede, are used to indicate the four steps, or stages, of the fountain.

For workmanship that seems to be an extension beyond the limit of human patience and skill in extreme fineness of technique are two other of Mr. Gilbert's designs, drawn and rendered by Mr. Johnson: the elevations of the winning designs in the competitions for the Detroit Public Library and Waterbury City Hall. The Detroit design, Figures 30 and 31, is a pure "India ink" drawing—every line is inked in perfectly and even to the flutes in the pilasters and the ornament on the wall under the arcade. The only toning is an almost invisible tint of pale yellow, quickly graded out from the base line upwards. The sense of atmospheric toning and "aerial perspective" are as perfectly felt as they are rendered. The decorative treatment of the drawing as a whole, the very subtle gradings of the washes (almost certain to be lost in reproduction with printer's ink and pulp-paper), the notable sense of color values all go to show technique at its peak, and something more than technique—the imagination of a very able artist at work. The rendered area of the drawing is 8¾ in. x 23 in. The drawing of the Waterbury City Hall (Figures 32 and 33) is at least equally fine in technique. Brick joints, sash bars, iron balconies, and the gates and railing shown against the dark background are, however, put in with Chinese white. The idea of representing a small model of the building rather than the building itself is the convention adopted. Note that the window openings are graded by stories from a dark, in the ground story, that is much lighter than the background but darker than the brickwork, to a light value in the top story that is lighter than the lightest part of the brickwork. The silhouette of the design is firmly marked by placing the lightest or "whitest" parts against the dark background. The background is graded from the ground line upwards, but the gradation counts but little in the effect. The brickwork is graded downward from the top story and meets the light tone of the stonework of the lowest story without the usual "jar" felt in most representations of red brick and light stone combinations. The *piquage*, in white, is maintained all over the surface but with such delicacy as to require the closest scrutiny to detect it. The rendered area of the drawing is only 9½ in. x 17 in.

(To be Continued)

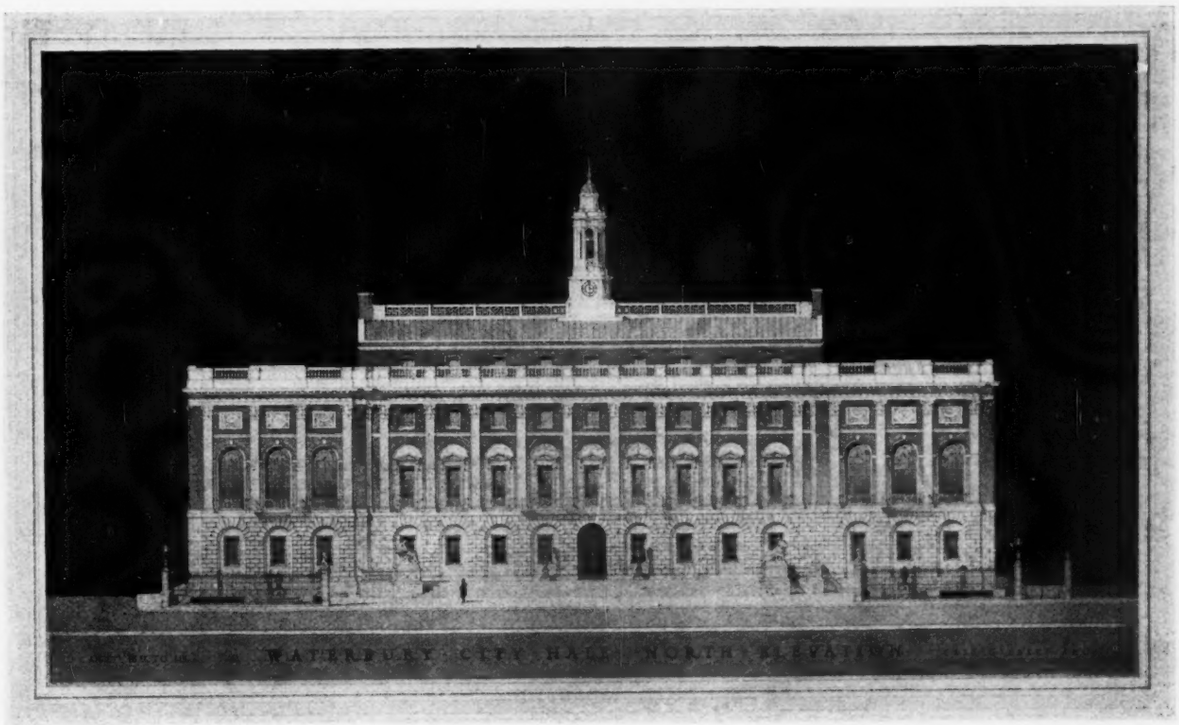


Figure 32. Competition Design for City Hall, Waterbury, Conn. Cass Gilbert, Architect. Rendered by Thomas R. Johnson. *(See detail on page 32.)*

DETAILING STONE WORK

BY J. R. S. SCOTT

PLANS are prepared, tenders are taken, contracts are let for the stonework. At this stage the stone draftsman appears, and much depends on how he interprets and carries out the design. In his way he is just as much interested in doing his part of the work and seeing it executed to the satisfaction of everybody as is the architect himself.

Stone, of one kind or another, is among the most important materials applied in quantity to the exterior of a building, and on that account the detailing of it deserves the most careful study. Up to a comparatively few years ago it was cut almost entirely by hand at the job, and on this account and because it has no fixed unit of size it was a simple matter to introduce any last-minute changes. With the present general use of machinery for sawing and planing the conditions are quite different, and the drafting is begun weeks before delivery is required, making alterations discouraging, difficult and expensive.

Often it is not what the architect fails to show that presents difficulties, but what he does show. In a stone mill of any size there is more stonework laid out and detailed in a year than many architects turn out in a lifetime. The stone draftsman must study it out for himself, for he cannot leave it to the next man to work out. Necessarily, therefore, he is well enough trained and has had a broad enough experience to be quite competent to lay out and make details for any part of the work where the architect has not seen fit to supply them. It is when the specification calls for sizes and sections that will not work out, or when the details are hazy, that most trouble arises, and one or two such points raised here may not only tend to correct them on the next job but ease the draftsman's path in other directions.

In the working drawings it is usual to show scale-detail sections of walls and other features. Often the section drawn is taken through an apparently tricky little place that actually will work itself out almost automatically, while nothing is shown by which the sill, lintel, cornice or coping construction can be determined; and these are always important. Or if one window is shown, the one beside it, of a different character, is omitted, or there isn't room to show the door. Often a section is made through the blank wall—it shows the water-table, perhaps, and omits the window and door.

It is usually in stone trim work that most trouble arises. If the entire wall is of stone, the draftsman has a chance to manipulate the jointing and details so as to make everything fit, but not so with a trim job. In such work it is customary to make the stone joints line with those in the brickwork. How often does the architect omit to give the brick sizes or neglect to figure his sizes to fit the lay of the bricks? Tables and scales giving multiples of various brick heights are available; if not, one can easily be prepared and blue prints supplied to every draftsman. By working out the heights to brick sizes the architect gets better work by saving the splitting of bricks, and also gives the stone draftsman an opportunity to check the dimensions; a figured height of 7′-0″ may be right or wrong, but if it is 7′-1¼″, with the brickwork running four courses to 11″, the draftsman has reasonable assurance that it has been worked out and is correct. The growing practice of indicating heights by the number of brick courses is of great assistance.

In figuring heights it is customary to locate the dimension points at the centers of the joints. In theory this is correct, and the smaller joint for stonework (at quoins for instance) should have its bottom a little higher, and its top a little lower, than the larger joint in the brickwork. In practice, however, this is almost out of the question; the stone is set, the line is stretched across from its top bed, and the brick is laid with its top bed to the line. The bricklayer will never bother to measure down from the top of the stone the one-eighth or three-thirty-seconds of an inch, or whatever is half the difference between the thickness of the brick mortar joint and the thickness of the stone mortar joint, and lay to that.

What at first might be considered a neater arrangement for quoining would be to make the wide quoins line with the bricks, i.e., to make the height from wide quoin to wide quoin equal to x times the height of a brick and its joint + one more brick joint. The trouble is that in irregular quoining, a quoin of a certain length might in one position be narrow, in another wide, and in a third it might be narrow when compared with the quoin above and wide when compared with the quoin below. This would mean three different heights for practically the same stone, with confusion to the draftsman, in the mill, and on the job. Moreover, this system will not work at all with stones oblong in plan, where the face makes a long quoin and the return head makes a short quoin.

Figures should, therefore, be taken from top bed to top bed. This method conforms to the actual operation at the job and solves most of the stone draftsman's problems as to whether or not the joint is to be included. By way of exception, cases like that of the daylight opening from sill to soffit of lintel should not be figured in this way but should have the one extra mortar joint added.

The three average dimensions of the brick to be used should be furnished, together with the size of the brick mortar joint. When the stone draftsman knows just where he stands, not only with respect to the heights, but in connection with the exact projection of piers and pilasters, the correct sizes for chimney caps, the reveals of doors and windows, or the face measurements of piers. It is a needless expense to clip a brick in every course in the

(Continued on page 64)

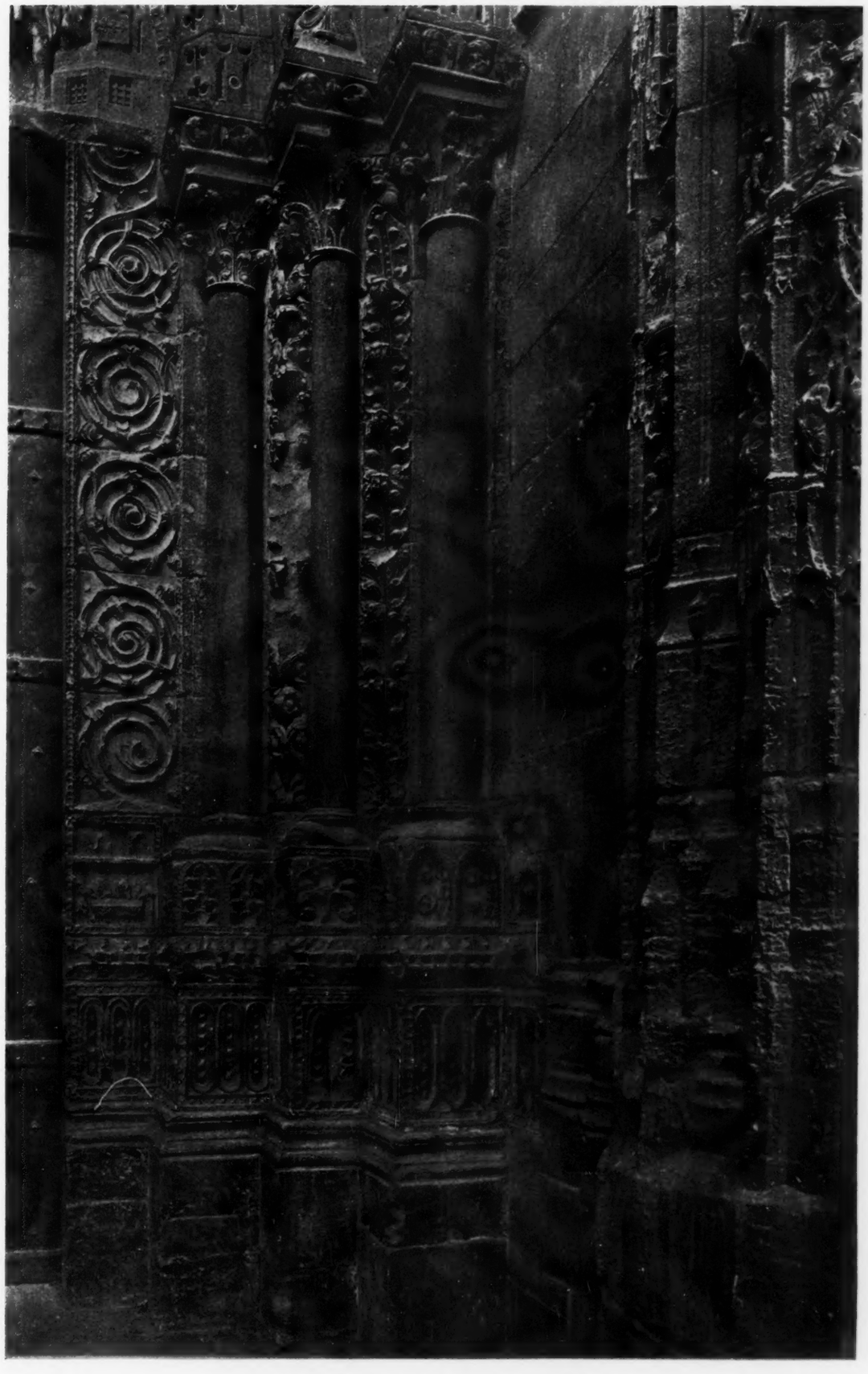
Courtesy of the American Hellenic Society

Frederick Boissonnas

THE ERECHTHEUM FROM THE WEST

UNIV. OF WICH.

One of the remarkably fine photographs of Greek architecture which formed a feature of the exhibition sent to this country by the Greek Government is reproduced on the other side of this sheet. Other photographs in this series were reproduced in the October and November issues of this journal. Frederick Boissonnas who made this view is widely known as a distinguished photographer. He resides at Geneva, Switzerland.

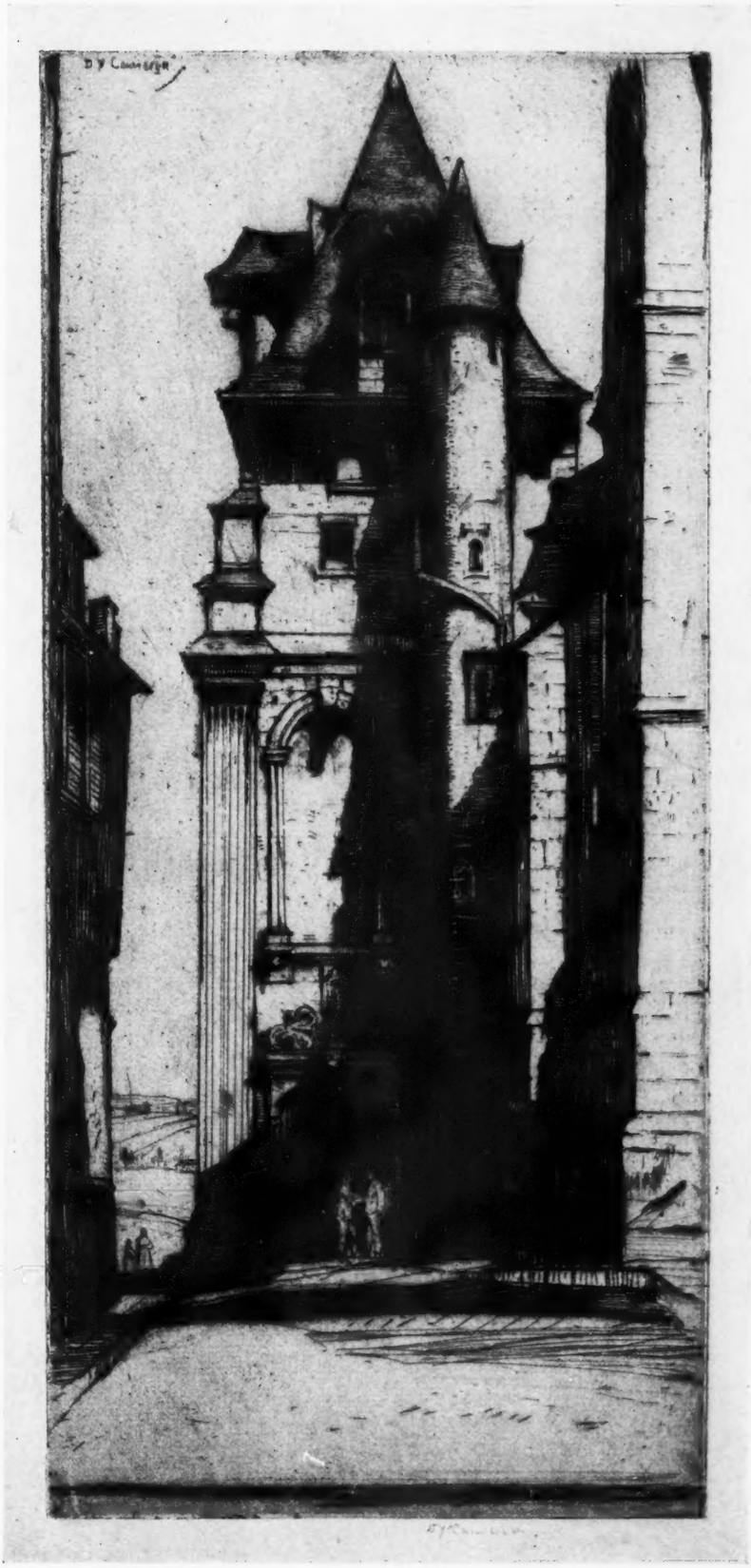


DETAIL OF PORTAL, ROUEN CATHEDRAL

FROM "SELECTED MONUMENTS OF FRENCH GOTHIC ARCHITECTURE"

UNIV. OF MICH.

A remarkably fine photograph of Gothic detail is shown in the plate printed on the other side of this sheet. This plate is from "Selected Monuments of French Gothic Architecture," a book which will be issued shortly by the publishers of PENCIL POINTS. *This book consists of one hundred plates carefully selected with a view to their usefulness in the drafting room and as good examples of French Gothic Architecture. These plates have been chosen from the achives of the Commission on Historic Monuments and from "Cathedrals of France," prepared under the direction of the Commission and of the Ecole des Beaux Arts.*



Courtesy of Kennedy & Co.

ST. AIGNAN, CHARTRES FROM AN ETCHING BY D. Y. CAMERON

UNIV. OF MICH.

It is always a pleasure to present one of D. Y. Cameron's etch'ngs, and the one reproduced on the other side of this sheet is of more than usual interest. In this plate, as in reproducing other etchings, special care has been taken to preserve the qualities characteristic of the etching process,—the richness of the blacks, the luminosity, and the suggestion of translucence in the paper.

PENCIL SKETCH BY SAMUEL V. CHAMBERLAIN. THE TOWN GATE, SEMUR-EN-AUXOIS, FRANCE

On the other side of this sheet is reproduced a pencil sketch which Samuel V. Chamberlain, who is now abroad, has sent to PENCIL POINTS, *keeping a promise he made to this journal before he sailed on his present trip. It is an interesting drawing from the standpoint of subject matter as well as that of pencil technique.*

THE SKETCH PROBLEM

BY JOHN F. HARBESON

In this article Mr. Harbeson treats the sketch problem in the same manner in which he has discussed other problems in the pages of this journal under the general heading "The Study of Architectural Design." This article will be followed by one on "Competing for the Paris Prize."

THE schedule of the Beaux-Arts Institute of Design has not only the "projet," but there is also the "esquisse-esquisse" or sketch problem. The "projet" we have seen is a problem to which from three to six weeks' time is allowed; for which a scheme or "parti" is set down in sketch form in the "esquisse"; this "parti" is then developed and studied by means of many successive drawings under the guidance and regular criticism of the "Patron," who has been all through a training of this sort some time before; and then the solution is presented in fairly elaborate and carefully drawn and well rendered drawings. For the projet "documents" and information of all sorts are used in the study.

The sketch problem is quite different. It is done in a few hours—usually only nine—and without criticism or advice, or the use of documents; and within these few hours there must be formulated a solution to a program—like the esquisse for a regular projet; but unlike the esquisse this solution must be "presented," that is, rendered to give an effect.

As we have said before, making the esquisse for a projet develops the power of quick, right thinking, for one soon learns that with an esquisse that does not contain a solution to a problem, no amount of care or study in presentation will make a first class projet; the sketch problem develops this same faculty, for here again a solution must be found for a problem, and only a small portion of the nine hours can be used for finding a "parti." Therefore a *good* "parti" must be found *quickly.*

Sketch problems may be roughly separated into two divisions, of which the plan sketch problem is mentioned first because it is the more important and the more difficult. In these problems elevation and section are explanatory only. There are a few plan sketch problems in Class B. In Class A, there are many and these are elaborated; and they become quite elaborate—difficult—in such competitions as that for the Warren Prize, for which a longer time is given, it is true, but where the program is complicated and difficult; in this competition criticism and documents may be used, however. This type of problem culminates in the second preliminary competition for the "Paris Prize," a forty-eight hour sketch problem that is a severe test of ability in thinking out a scheme—solving a problem—and in presenting it in a telling way. We shall consider the plan sketch in the next article.

Figure 11. Class A Esquisse-Esquisse, "The Entrance to a Dance Hall," by R. S. Potter, Atelier Cret, University of Pennsylvania.

The other type is the decorative sketch problem, usually requiring an elevation or perspective of a small composition with an explanatory plan at small scale. This starts in Class B with such simple problems as those shown in Figures 1 and 2, includes the Spiering Prize Problem (Figure 3), and is continued in Class A with more complicated problems of a similar nature, such as Figure 4, and in such problems of interior decoration as Figures 5 and 6. The Pupin Prize problem is of a decorative nature; for this, like the Warren Prize, more time is given and criticism and documents may be used.

The first preliminary for the Paris Prize is a problem of this kind—a test in the handling of the elemental forms of architecture of good proportions, and in presentation—Figure 7 and Figure 8. Those who go to Paris to take the regular examinations for

entrance to the *Ecole,* find the test in design is a problem of this sort (Figures 9 and 10). In these a direct elevation, a plan and a section of some small architectural form are required. The authorities of the Paris school thus make proficiency in the sketch problem a requisite for entrance to the school —for any further study. As only a definite number are admitted to the *Ecole,* and as those who fail at one test usually try again at the next examination, the competition becomes very keen; so keen, in fact, that there are various ateliers in Paris that are filled with men preparing for this examination, taking sketch problem after sketch problem on programs similar to those used for the entrance examinations, so that when they come to take the examination itself, they have learned just what to do to use their time to the best advantage.

The sketch problem forms habits of quick thinking; it also develops facility in presentation, and both of these are of great value in work on the projets. It is a necessary part of any student's training, doubly necessary if one hopes to become a logist for the Paris Prize, the surest test of proficiency in Beaux-Arts training. If a student ever expects to enter the first or second preliminary competitions, he must take as many sketch problems as possible. One cannot make a good sketch problem on the first attempt—to do them well means to do them often, for this is the only way to learn how to make the most of one's time, how much time may be used for finding a scheme, and still leave enough for the presentation. These things cannot be determined while doing a sketch problem; there is not sufficient time. It is a mistake to think of the sketch problem as a matter of trickery, of indication; but there are conventions and methods of presentation that are different from those used in a regular problem, and these must be learned—the technique of the sketch problem.

Usually if you have an idea you can visualize it —can see it among a few lines on the paper. But it will take more lines to express this idea to some one else—and more and more lines—up to a certain point—will help to express the idea to an outsider. Beyond this point more lines will only complicate and confuse the idea. The esquisse-esquisse must make a picture. It must also express your idea, your solution of the program, to some one else—to a stranger.

There are two things we must do then. First, we must conceive a solution to a given problem—quickly; second, we must "get it across"—present it in a convincing way in an incredibly short space of time.

Let us consider the decorative sketch problem: a man who has done a number of them usually has evolved a system, a technique of his own, based on his knowledge of his own talents and ability, that works out well for him, brings him results. If it does not do this, he will be willing to consider trying other ways of doing it. And the man who has done few sketch problems may find a great deal of value in a method of procedure that will help him arrange his time and use his talent to the best advantage until such time as he will have developed his own "system." If we take a Class B sketch problem then, such as the "flower market" of Figure 3, it is well to do it in this way, remembering that we start with an empty paper and a program, and must turn in, nine hours later, a well presented solution to the problem.

We speak of the Class B Esquisse-Esquisse, for the Class A sketch problems are a part of a progres-

(*Continued on page* 60)

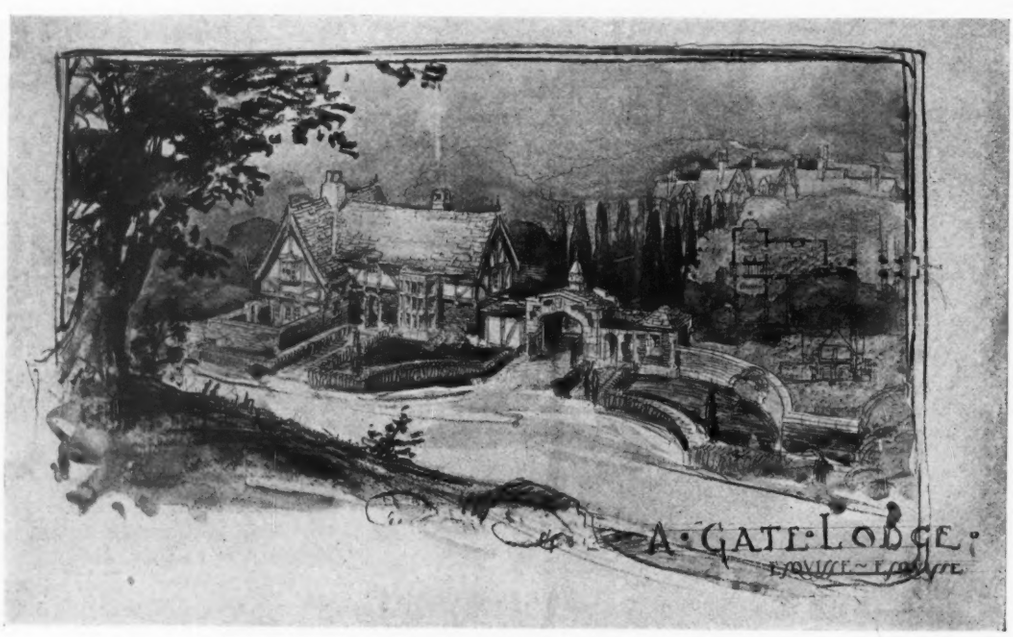


Figure 12. Design for "A Gate Lodge" by Lionel Pries.

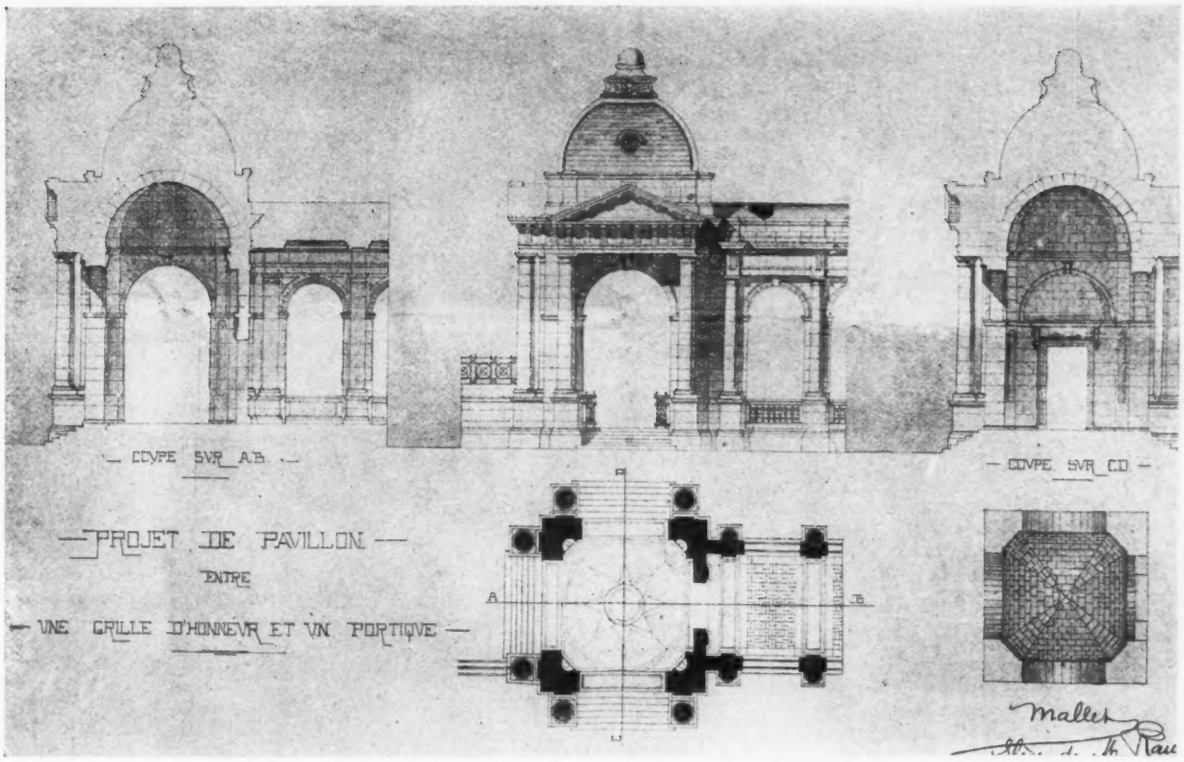


Figure 10. Admission Drawing, Ecole des Beaux Arts, Paris. By M. Mallet, Pupil of M. Raulin.

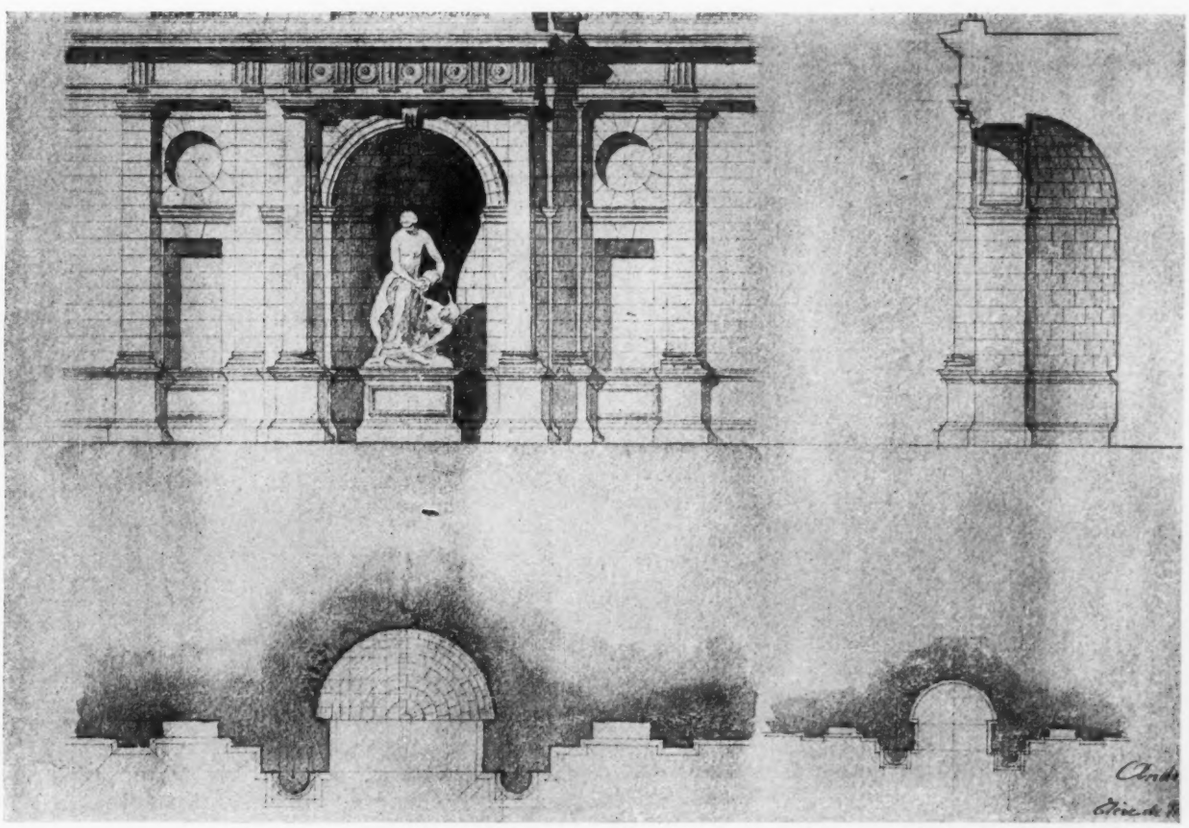


Figure 9. Admission Drawing, Ecole des Beaux Arts, Paris. By M. Dassier, Pupil of M. Laloux.

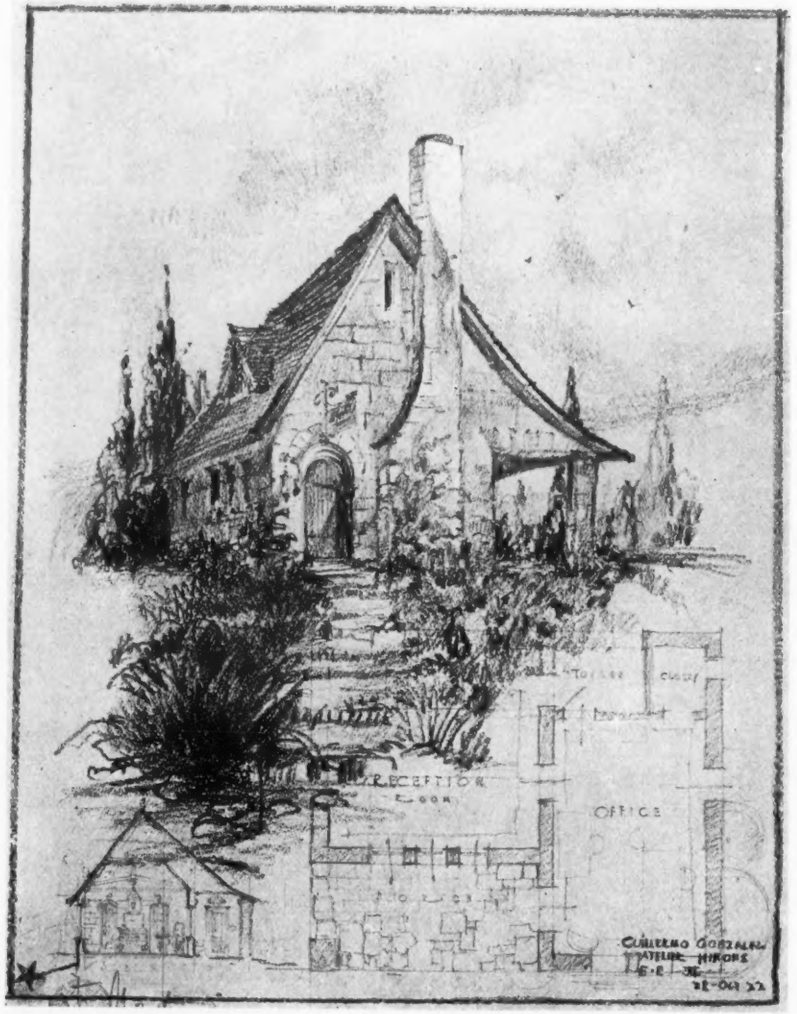


Figure 1. Class B Esquisse-Esquisse. "A Real Estate Office in the Country." By G. Gonzalez, Atelier Hirons, New York.

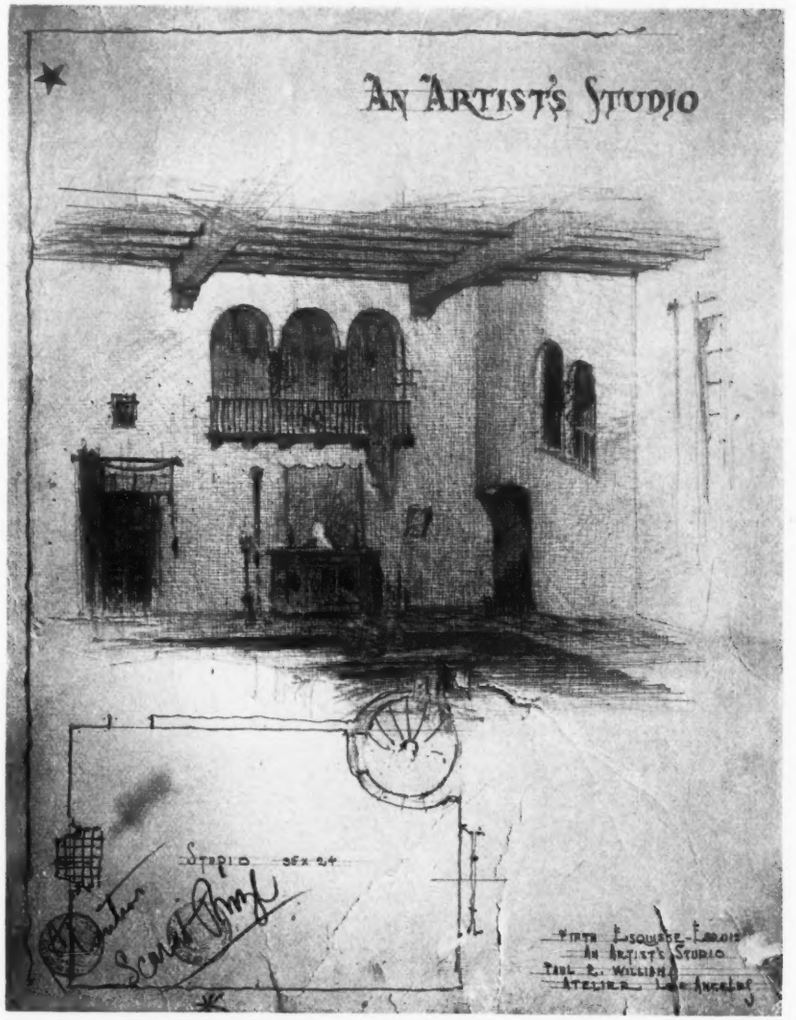


Figure 2. Esquisse-Esquisse. "An Artist's Studio." By Paul R. Williams, Atelier Los Angeles.

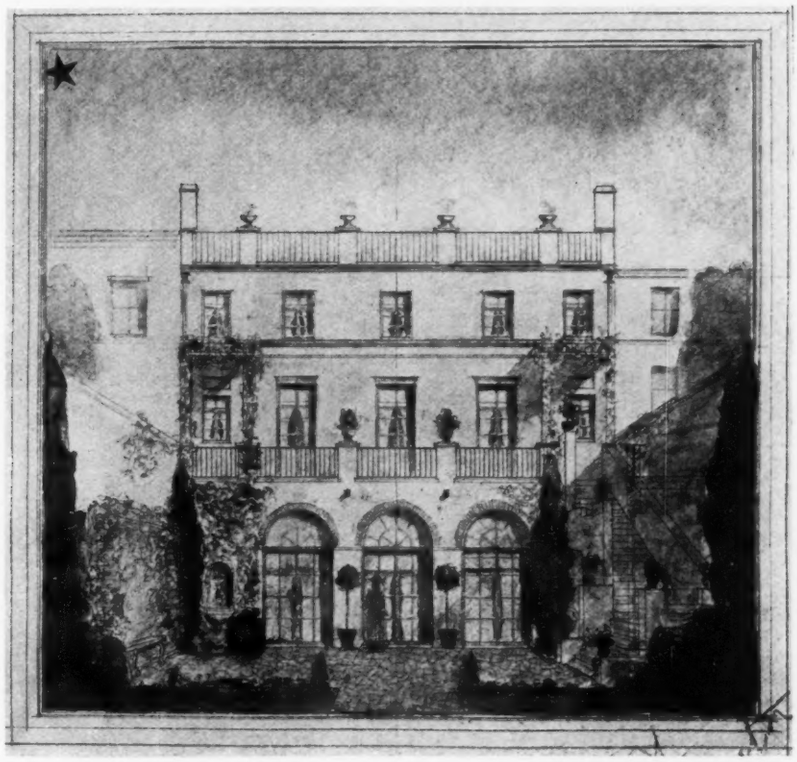


Figure 3. "The Garden Façade of a City House."
By C. B. Lewis, Yale University.

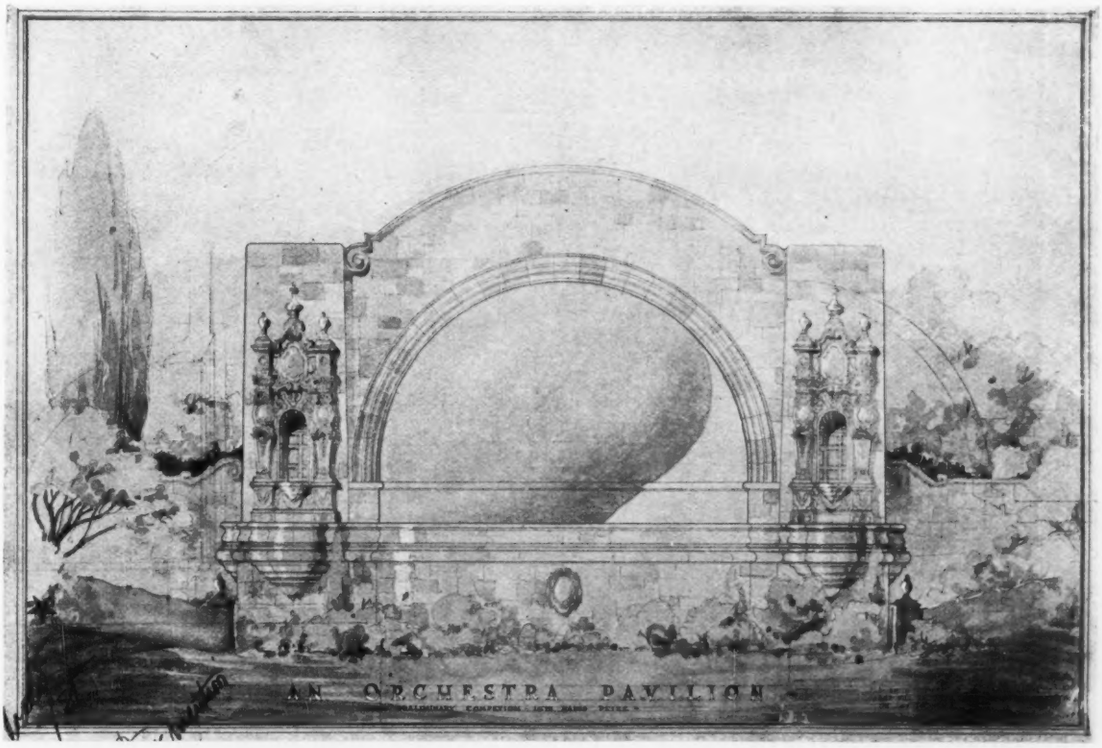


Figure 7. "An Orchestra Pavilion." By P. O. Davis, Los Angeles Architectural Club.
First Preliminary Competition for the Sixteenth Paris Prize of the
Society of Beaux-Arts Architects.

Figure 4. "A Gallery Over a River." By D. M. Allison, University of Illinois.

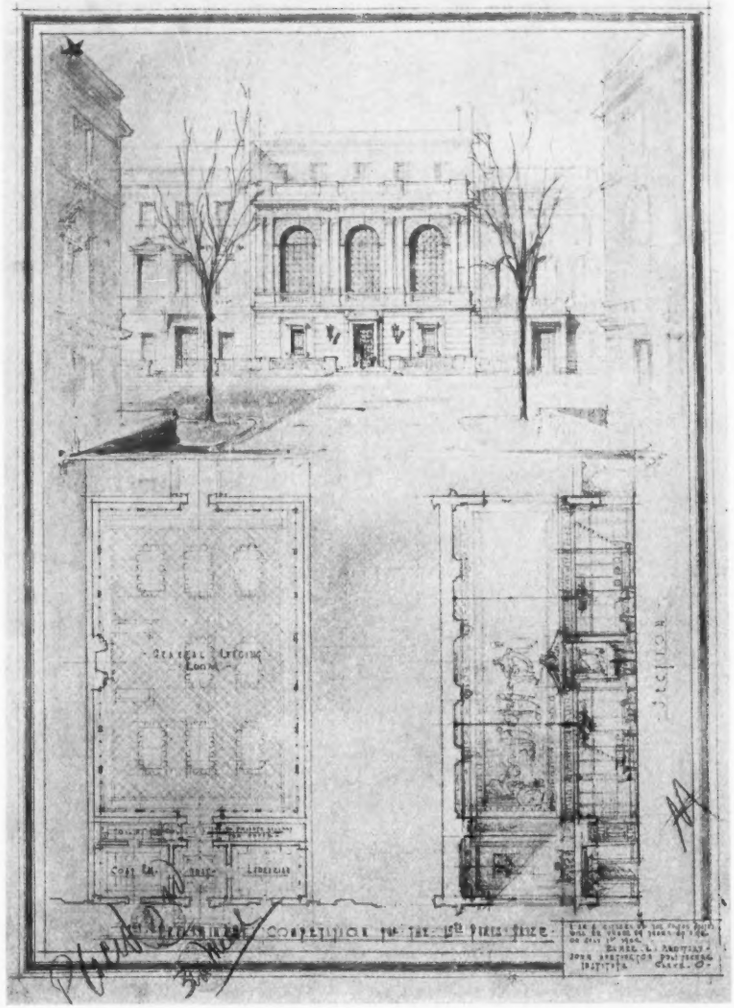


Figure 8. "A Private Library." By Elmer L. Babitsky. John Huntington Polytechnic Intitute.

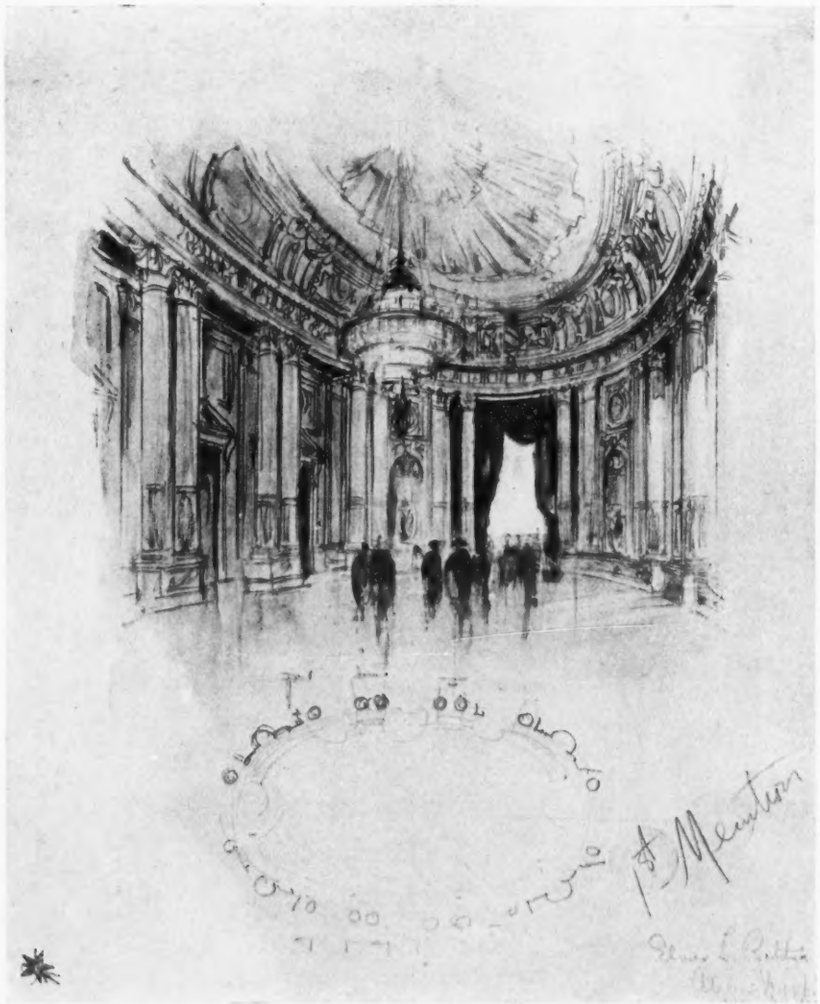


Figure 6. "A Reception Room on a Steamship Pier." By Elmer L. Babitsky, Atelier Wynkoop, New York.

Figure 5. "A Ceiling Decoration." By T. E. Ash, T-Square Club, Philadelphia, Pa.

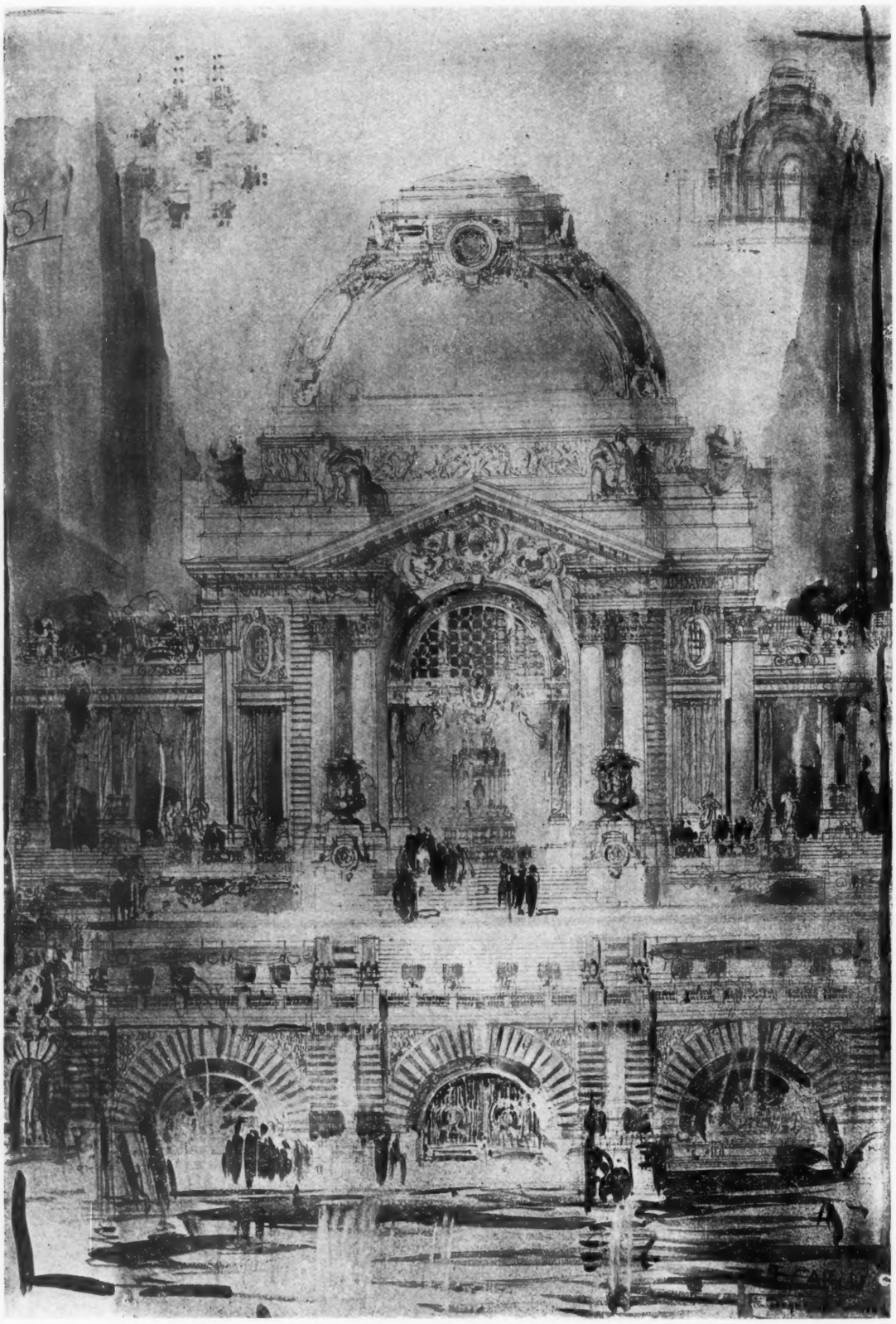


Figure 13. "Un Pavillon pour Une Source d'Eau Thermale." By M. Carlu, Pupil of MM. Duquesne and Recoura. Ecole des Beaux Arts, Paris.

DESIGN IN THE DRAFTING ROOM, PART II

BY JOHN C. BREIBY

This is the second installment of a new article in which Mr. Breiby goes back of the subject "The Making of Working Drawings," which he has treated in recent issues, and discusses the preliminary study that precedes the beginning of the working drawings. In this installment Mr. Breiby discusses elevation study particularly. Mr. Breiby is a member of the organization of Carrère & Hastings, Shreve, Lamb & Blake.—ED.

SUCCESSFUL designing can be attained only after a thorough analysis and earnest criticism of the design problem to be solved. Self criticism is perhaps the most important guide for the artist or designer to follow. The spirit of self criticism is the ever-willing voice which will whisper to the mind praise, when praise is due, or rebuke when deserved. Its warning voice is like the refiner's fire which separates the gold from the dross. The designer does well to take heed of the warning which comes from within. Criticism, by persons qualified to give it, should always be taken as the helpful and kind expression of a friend.

Anyone can criticise, but everyone cannot criticise justly and wisely. Personal opinions, desires and tastes differ with each individual and these traits will color the advice and suggestions given. Never offer a destructive criticism and leave it at that; do not allow personal opinions or feelings to take such an upper hand so as to shut out another viewpoint. Never belittle the work of another. Always be ready to rebuild and strengthen, if need be, that which by necessity has been torn down. Co-operative discussions, suggestions (if sincere) and criticisms are the stepping stones to good design.

In the working out of any composition, the artist or designer usually feels a sense of self-satisfaction (this feeling should by no means be quenched); the the danger, however, is that the composer is often carried away in thought to a high state of ecstasy, even at times to the exclusion of sound judgment. This feeling of ecstasy, when used to advantage, is the very reason why the first "snap judgment" of a problem will often be the final solution or—as expressed in part in the editorial of the November number of PENCIL POINTS—"A man's first reaction to a problem is often the best." As a check, when the imagination has a tendency to become more or less rampant, it is well to lay the problem aside for a time, even if necessary to forget it or "sleep on it," to express it in slang. It is remarkable, when work on the problem is resumed with a rested mind and refocused vision, how many interesting and necessary modifications or means of disentanglement will unfold themselves. This is a part of the work of self criticism. There is no need to describe in detail how valuable are the judgment and criticisms of others whose different viewpoints, fresh thoughts, and rested eyes can always help to detect faults and render helpful suggestions. As pointed out before, such suggestions to be of value must be unselfish and not partial.

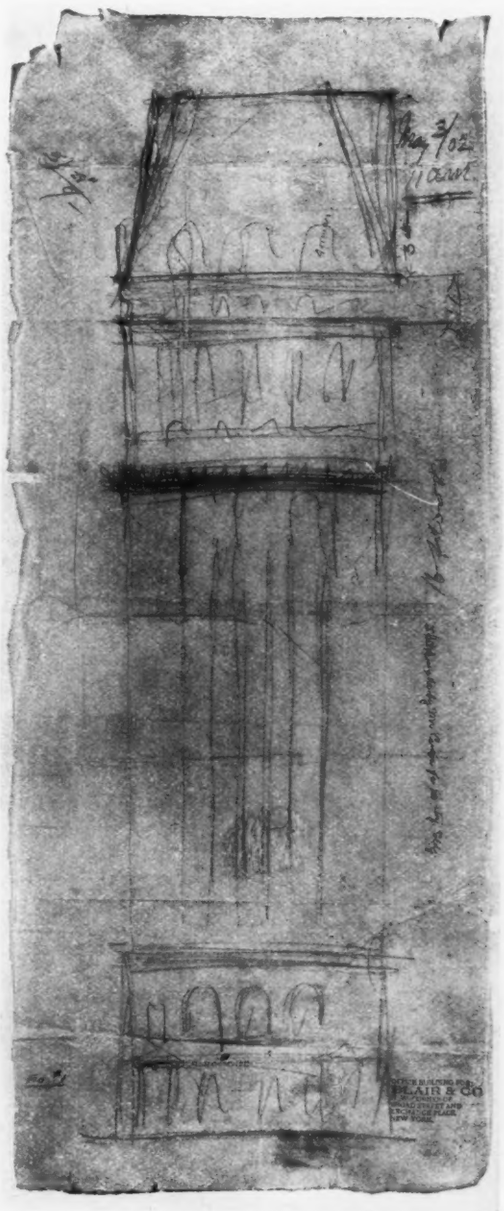


Figure 6. First Sketch for an Elevation by the late John M. Carrère.

Architecture has developed by means of traditional and progressive criticism either for aesthetic or practical results and reasons. Aesthetic criticism is a hidden indescribable gift which arises from within, and this gift makes itself known purely through the attribute of the power to feel emotions. Truly enough, laws and rules are given for basic effects de-

sired, but such laws and rules are very flexible and even though some given law is followed for that which is pleasing to see, the beauty resulting is felt not merely because a particular law is followed, but because the effects stir or set in motion the faculties within, which find the result good. Aesthetic laws or rules are, therefore, not laws of formulas or calculations.

As an example, the architects or master builders of the early historic periods, who had in turn inherited aesthetic rules from their predecessors, developed a definite method for obtaining the entasis on a column shaft. They discovered the reason the column would appear more graceful and refined; if given an entasis which among other things overcomes certain optical illusions and gives a sense of life that is lacking in columns shaped as true cylinders throughout their entire height. Again, in designs of architecture of the Classic periods we find rules in which practically all proportions, all relative divisions of detail are based upon the unit of or parts of the unit which is established by the radius of the column shaft, measured just above the base, now known by the term of "one module." We accept these rules without question, because they please us. In so doing, therefore, are we not of like nature with the ancients and heirs to their kingdom of thought, aesthetic emotion and visual vibrations? In working out design, this aesthetic inheritance is the great force which unconsciously guides the mind and eye in the seeking of that which is good. The wonders of nature itself offer a splendid opportunity for the study of proportion, mass and color, as revealed in the human form, in the lower animals, in vegetation, in the formation of rocks and crystals—in short, nature's creation is a work of beauty.

Architectural design then is a work of adaptation of the written and unwritten laws for aesthetic values, applied to the actual casting and moulding into shape of materials which are to be used in building construction. Even purely structural design of practical and sustaining materials calls forth these same feelings. It does not require much experience to train the mind and eye to judge whether a structural column or beam appears too light or too heavy for the particular load or work imposed thereon, or whether a wall appears thick enough for its height or length, etc.

The proper use of materials has a purely aesthetic value (even though this may be for absolutely practical reasons), for instance, to give a

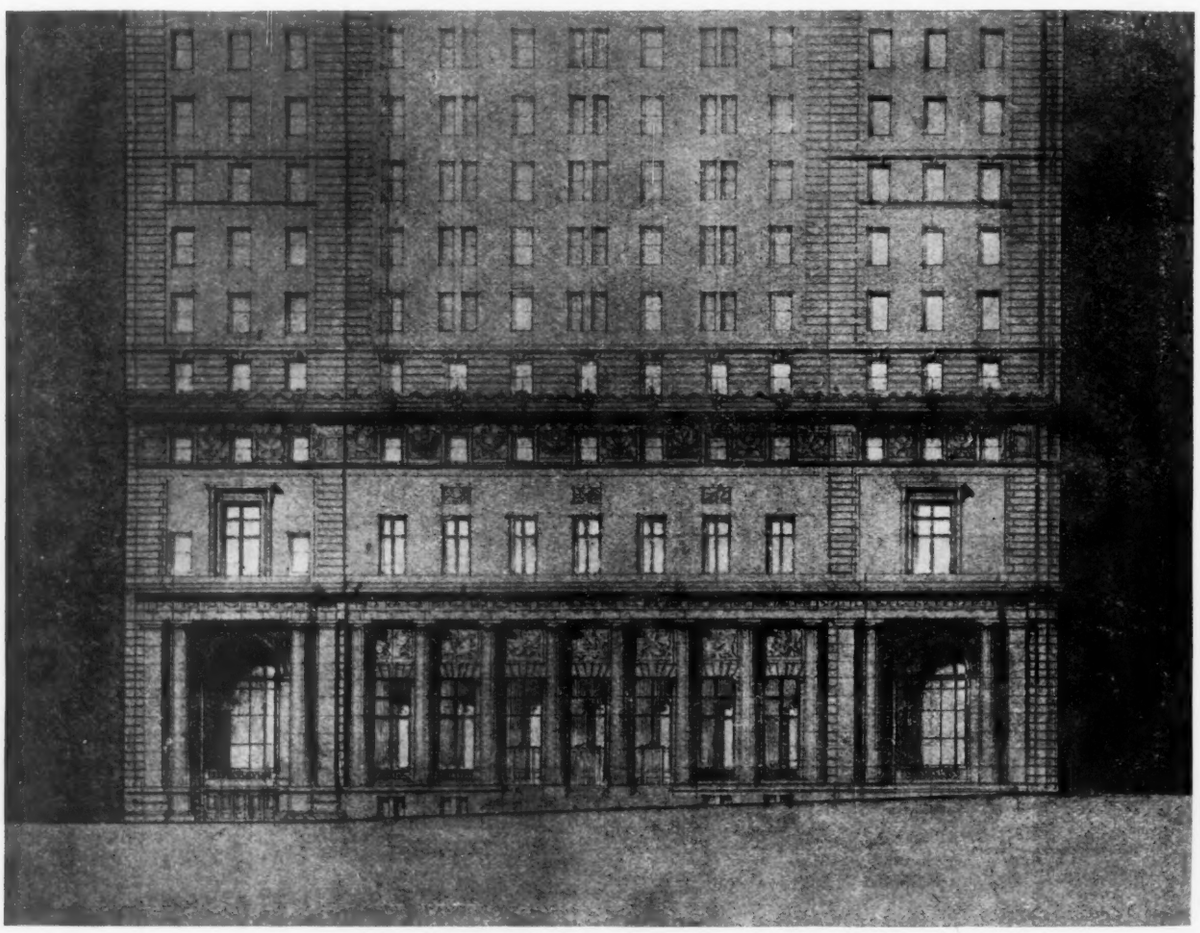


Figure 7. Portion of a Study for an Elevation by Thomas Hastings.

rather crude example: It surely would not look proper and right to support stone work upon wooden posts, even though the wooden columns were designed for sufficient strength to do the work required. The reason for this faulty relationship is obvious. The lasting qualities of the stone and comparatively short-lived nature of the wood will clash in the expression of varied durability. The materials may of course be painted to imitate each other, nevertheless the different vibrations will stir up the feeling of inequality and will not appeal to our sense of fitness and therefore are not of beauty. Improper uses and relationship of materials are too numerous to mention. To avoid conflict between materials, great consideration must always be given, as it is a part of the work which has made architecture a fine art.

As structural steel has to be protected from the action of atmospheric moisture, gases, and also from fire, which attack and structurally weaken this material, protection must be provided and the method of protection, and materials to be used, are usually determined by building ordinances and good practice. Concrete, terra cotta, brick and stone are the usual structural steel protective materials (the rust proof paint required will not be considered as architectural design material), it will then be perfectly good architecture to enclose the steel with and in the character of design which the selected material calls for. So if the protection is to be of stone, the character of architectural stone column of classical proportions may properly be adopted.

Architecture differs from all other fine arts, owing to its nature of being constructive not merely to the mind and eye, but also meeting the practical requirements of human life. No matter how beautiful a painting or tapestry may be, it would be utterly impossible to clothe a building therewith, and call it architecture. This would be unfit for the beauty of building design. The enclosing of a structure by suitable and lasting materials will always be a subject for deep study. Constantly new materials and building requirements are being developed which will all have to find their proper places in the art and science of Architecture. Among the many features for architectural study, com-

Figure 8. Enlargement of a Photograph Showing a Building to Which it Was Proposed to Erect an Addition.

Figure 9. Photostat of Enlargement Shown in Figure 8, Upon Which a Perspective of a Proposed Addition to the Original Building Has Been Drawn. Theodore E. Blake, Architect.

paratively recently introduced to meet modern demands, are the large show window, the fire escape, the revolving door, the smokestack, etc.

Perhaps one of the most interesting recent developments is that of the zoning and height of building regulation. This meets a long felt want, especially for the larger cities. In the smaller communities a step to enforce similar regulations should be taken before such laws will become an absolute necessity to safeguard the well-being of the growth of building operations from a standpoint of beauty, safety and utility.

The work of design in the drafting room is not merely the study of proportion, scale, color, etc., for beautiful architectural effects, but the most important work is to fit a beautiful architectural composition to requirements, and demands, which are at times very prosaic and precise. The required sizes of window openings may often be given, and for certain classes of buildings a definite size is required by law, and these definite requirements may not permit one to design to the best advantages for architectural composition. The difficult problem must be overcome, however, and it must be well done. The façade of the modern apartment house in reality is made up of walls punched full of holes of required size to be shaped into windows. Even the size of each pane of window glass is given as a factor to be struggled with by the designer. To make a pleasing way of grouping these windows, which are to be in scale with the entire composition, is only one of the many problems to be solved by designers in the drafting room.

No invariable rules or laws for aesthetic effects or the consideration of harmony in material combination, nor for relationship of wall surfaces or formulas for architectural composition can be given. The designer must feel his work always, working with the knowledge as to how the completed work will appear, properly using materials in harmony with the purpose of the building and with its surroundings. Fill the mind with beauty by reading and looking at good books of designs. Develop that feeling which comes from within, and be able to unconsciously discern what is pleasing and in good form and one can cast aside the unfit.

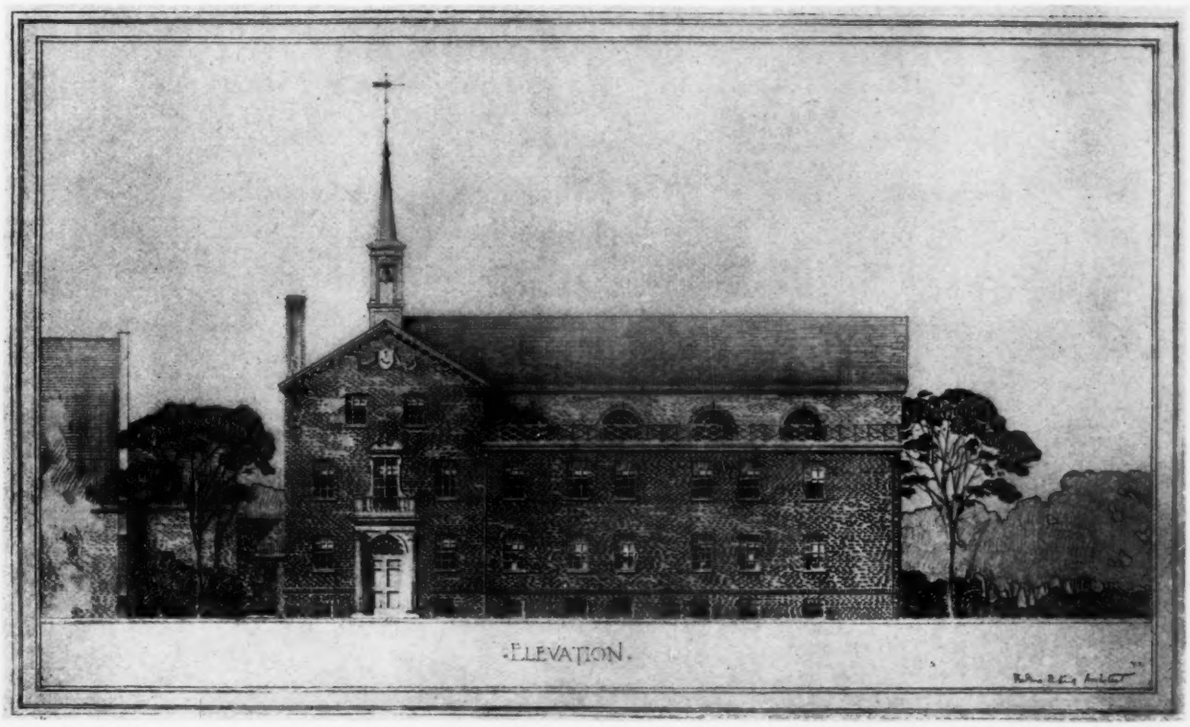


Figure 10. Elevation of a Parish House. Frederick R. King, Architect.

Figure 11. Sketch Study of a Country House. Harry Creighton Ingalls, Architect.

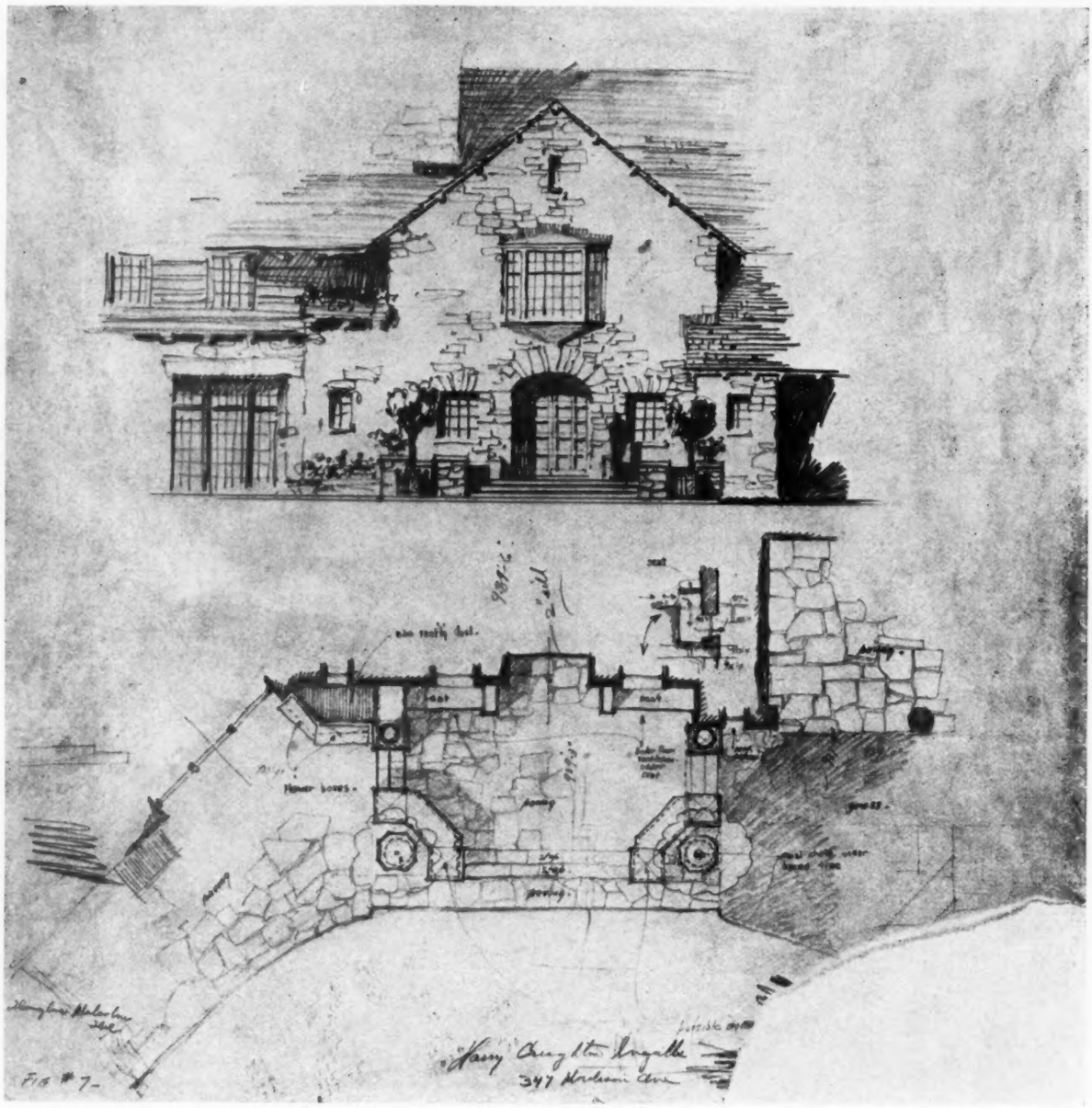


Figure 12. Free-hand Study, Part Plan and Elevation for the Main Entrance to a Country House. Harry Creighton Ingalls, Architect.

Figure 6 is a reproduction of the first sketch suggestion of an elevation drawn by the late John M. Carrère for the Blair Building, New York City. Perhaps this very sketch helped in some degree to solve a very difficult problem with which the architects of some twenty years ago were struggling. This was to develop a pleasing design suitable for tall buildings. The building of such structures at that time was rapidly becoming more and more necessary, in order to obtain the maximum return in rentals for floor area on properties having extremely high land values, especially in overgrown and congested districts.

The taller buildings erected, up to about the time this sketch was made, were generally designed with horizontal bands or superposed architectural treatment to overcome the appearance of being "stretched out." The demand for a suitable design of the so-called "skyscraper" then grew beyond the bounds of the architectural motifs used, for it would have been impossible to continue the superposed orders and horizontal bands upwards for twenty stories or more, without having the building look like "Jacob's Ladder."

Mr. Carrère, as his sketch would indicate, clearly foresaw the requirements of a suitable design for the skyscraper, in his conception of the building as a complete mass and not something formed by piling one narrow architectural treatment above another. The result was the introduction of what

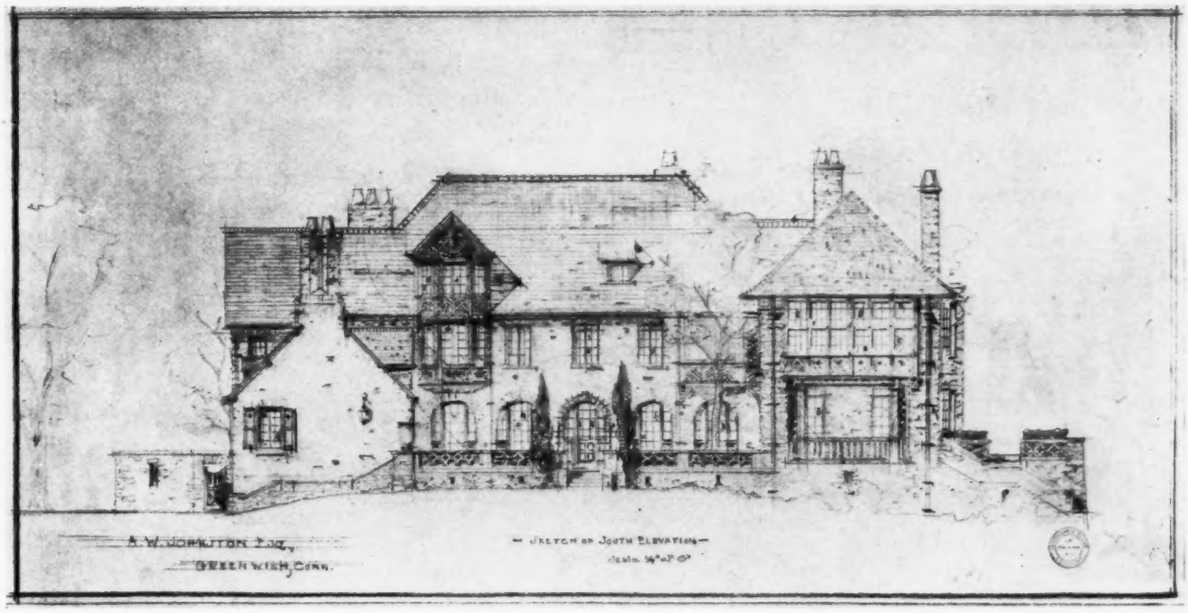


Figure 13. Study in Elevation for a Country House. Theodore E. Blake, Architect.

might be called a new type of architecture, which is characteristically American. The forerunners or prototypes of the design of tall buildings can, of course, be seen in the campanile and towers of the old world, or perhaps the column with its base, shaft and capital may be used as a prototype, with the lower stories of the building treated as a base, the main long body being considered as the shaft, and the upper floors, which are usually embellished with the cornice, may be regarded as the capital.

Embryonic as Mr. Carrère's sketch is, it is really the beginning of the working drawing for this façade and it is very interesting to view the erected building which has now been standing for about twenty years. Compare the general treatment and effect of design with this sketch and note how all the principal features have been retained and are executed in a solid mass of materials which was so roughly, almost crudely, indicated on a scrap of tracing paper by one whose enduring testimony will be for all that is good in architecture.

Figure 7 illustrates a sketch study drawn by Mr. Thomas Hastings for the lower part of an office building. This drawing has been selected to show the technique in draftsmanship, the perfect command in the study of composition, the knowledge of motifs. Perhaps this drawing will illustrate in some measure the remarks made in this article, regarding the fact that the feeling and ability to judge that which is good must come from within. A certain sense of pleasure or composure is felt when the design is in scale and harmony.

Another important effect can be seen, or rather felt, from this drawing in the relationship and scale of the windows above the principal column motif. The windows are of just the right size and shape and could not be any differently arranged nor changed in shape, without having a disturbing effect. It is from the working and association with men who have attained prominence through their own ability in producing actual results, that the younger and less experienced will obtain confidence in their own work. Advice from the superiors will always be gladly given; and with it is placed a trust which is, that the work of good architecture will be carried on.

Figures 8 and 9 illustrate a very interesting way of presenting to the client a "picture" of work to be executed, especially for an addition to be built to an existing building. Figure 8 is an enlargement from a photograph showing the present building designed by Theodore E. Blake, over which enlargement the contemplated addition was drawn along the same perspective lines, although this addition, in this case was made on another sheet of paper. There is no reason, however, why the drawing could not be made on the enlargement itself, if the character of the photograph would permit.

This additional drawing was then pasted on the enlargement and then rendered in pencil or wash to harmonize in tone value with that of the parts shown in the photograph. The enlargement on which the additional drawing had been pasted was then re-photographed and the reproduction shown by Figure 9 presents the finished result.

With the modern and economical methods of obtaining photographs and photostats, either from drawings or of actual executed work, the method as illustrated may perhaps develop into a very interesting way of presenting contemplated work to the client. Drawings can also be photographically copied and then be used as studies for development, changes, etc., without the necessity of altering or

(Continued on page 60)

PENCIL POINTS

Published Monthly by

THE PENCIL POINTS PRESS, Inc.

Publication Office — Stamford, Conn.

Editorial and Advertising Offices — 19 East 24th Street, New York

RALPH REINHOLD, President F. W. ROBINSON, Treasurer
EDWARD G. NELLIS, Vice President and Secretary
EUGENE CLUTE, Editor W. V. MONTGOMERY, Business Manager
RAY D. FINEL, Advertising Manager

Copyright, 1923, by The Pencil Points Press, Inc.

Subscription rates per annum, payable in advance; to The United States of America and Possessions, Argentina, Bolivia, Brazil, Columbia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras (Republic), Mexico, Nicaragua, Panama, Paraguay, Peru, El Salvador, Spain and Colonies (Balearic Islands, Canary Islands and Spanish possessions on the north coast of Africa), and Uruguay, $2.00. Single copies, 25 cents. Canadian Subscription, $2.50. Foreign countries not mentioned above but in the Postal Union, $3.00. Payment for foreign subscription should be made by International Money Order or American Express Money Order drawn in terms of United States Funds.

All subscribers are requested to state profession or occupation.

In changing address, please send old as well as new address.

SAN FRANCISCO ARCHITECTURAL CLUB NOTES

AFTER the banquet all effort is directed toward the success of the Annual Club Jinx to be held in December. Al Williams may be seen most any day in whispered consultations with other members of the Entertainment Committee, with a mysterious and knowing smile forcing itself upon his countenance. Wilton Smith closes up like a clam, and is apparently as much unconcerned, but we have always been told that appearances are deceiving with these quiet fellows. Discordant strains of guitars, banjos and ukeleles are heard emerging from the Atelier room every night, but still a trained ear can discern a remarkab.e improvement from a week ago. Rehearsals are the order of the day, and yet everything seems to be shrouded in mysetry. This much only has gotten to the reporter's ears: that it is going to be SOME JINX, and this is all that he can testify to.

The Free Hand Drawing Club started in September has proved such a success that it has been decided to continue the class for another ten weeks starting on November 27th, to draw from living models.

The following new members have been elected during the past month: H. W. Ruppel, Geo. W. Travis, M. Bernstein, Mark E. Manning, Theodore Vierra, Edward Cereghino, Bernard W. H. Scott, and James Edward Bodem. The Club is now aiming toward a goal of three hundred members, and at the present rate of increase, it will soon be reached.

THE PITTSBURGH ARCHITECTURAL CLUB

WITH enormous gobs of enthusiasm, the Pittsburgh Architectural Club conducted their initial event of the season, at the Schenley Hotel of Pittsburgh, on the evening of October 25th.

Aside from a sumptuous banquet, the annual election of officers was the piece d'resistance of the evening, and in spite of the usual withdrawals of candidates, etc. (the architects of Pittsburgh are extremely retiring and office shy), the following victims were inducted into office: Leo A. McMullen, President; W. B. Chalfant, Vice-President; H. B. Steffler, Secretary; Thomas Pringle, Director, and William Harrold, Treasurer.

Mr. Chalfant (Compte de Chalfant), editor of the *Charette*, addressed the assemblage in his usual vigorous manner, at length; easing his mind of a burden that has evidently been troubling him a long time.

The guest of honor of the evening was Henry McGoodwin, who has recently returned to Pittsburgh and is putting much spirit into his work at Carnegie Tech. More power to him! Introduced by Mr. Pringle, chairman of the meeting, Mr. McGoodwin responded with a few very brief words of appreciation. Mac is an ardent, hard worker but dislikes to talk about it.

Mr. Grapin, Prix de Rome, etc., recently appointed professor of Architecture at Carnegie Tech., was the assistant guest of honor, but responded to an invitation to speak with a mere smile. Mr. Grapin is very modest and in addition to that *parles* mostly *Francais*.

The members of the Institute avoided the tedium of a business meeting by wandering off to the Carnegie Galleries to view the Fall Exhibition of Paintings. The Club members expected to join them later, but became lost in a maze of discussion and argufication;—hence lost the pleasure of listening to the wisdom of the ancients (advisediy). "A pleasant evening was had by all."

THE CARNEGIE ARCHITECTURAL SOCIETY, PITTSBURGH, PA.

THE Carnegie Architectural Society, a reorganization of the Tech. Architectural Club of 1912, has successfully started the school year. The graduate and undergraduate members of the society have always endeavored to foster and develop architectural interest and ability amongst the members and to create a better feeling of fellowship between the students in the department.

Professor Henry McGoodwin, Director of the College and faculty advisor of the society, attended our first meeting this year. He spoke on Beaux-Arts problems. Our purposes were discussed, plans were made, and from all indications, this year will be more active than ever before.

The Carnegie Architectural Year Book which was first published last year is again being considered this year. A scholarship has been offered by the society for the best work in the department, also prizes for the best esquisse-esquisses. Then, too, smokers, dances, a banquet, and an exhibition have been scheduled so that the social as well as the professional activities have been well balanced.

The society has rented a home on the campus where many of the members are living. The weekly meetings are held in the club rooms and during this season, as in the past, addresses will be made there by city men, prominent in the profession. Classes are also conducted in sketching and water coloring at every other meeting.

Last Tuesday, the members held an informal banquet. Several of the alumnae were present. Among them was Mr. "Will" Perkins, who is an instructor at the College. Mr. "Art" Gehring, who has just returned from his study and travels in Europe, was also with us.

We take this privilege, which PENCIL POINTS has so kindly extended to us, to ask our alumnae and friends, whom we have been unable to communicate with, to send us their address. We wish to send each and every one The Carnegie Tech. Year Book and circulars.

COLUMBIA EXTENSION ATELIER

AT THE annual election of officers of the Columbia Extension Atelier, the following men were named to hold office for the ensuing year: Massier, Walter Conley; Sous-massier, Merrell G. Maybeck; Treasurer, G. R. Tyler; Secretary, W. E. Page; Librarians, Charles H. Dornbusch, A. E. Klueppelberg.

The Atelier has been very fortunate in securing the services of Mr. J. G. Schuhmann, Jr., as critic. He will serve with Messrs. Corbett, Van Pelt, and Flanagan.

Mr. Schuhmann was a former member of the Atelier and was its massier 1919-1922. He won the French Society Medal in 1919 and in 1920 he won the Municipal Art Society Prize and the Emerson Prize. For two consecutive years he was a Paris Prize logist. He enlisted in the U. S. Army Corps of Engineers in November, 1917, and was promoted to Master Engineer. Mr. Schuhmann's ability and intense interest in Beaux-Arts work have long been recognized by those associated with him, and he makes a valuable addition to the Atelier's able staff of critics.

THE AMERICAN ACADEMY IN ROME

FROM a letter recently received by Mr. C. Grant LaFarge, Secretary of the American Academy in Rome, from Mr. Gorham P. Stevens, Director, we quote the following news items:

"The month has been one of departures, preparation for the new Professors and Fellows, and report writing for all concerned. The new Professors and new Fellows are now in residence, and the first meeting of the Academic Council has already taken place. The student body never grows old—this is an affliction visited only upon the Professors! The work of the seven or eight students in residence has gone on quietly but satisfactorily. Of especial interest to me has been architect Hafner's study of the Dome of St. Peter's. He is making an investigation of the line of thrust of the dome. The two shells and the ribs are covered with plaster, so that it is impossible to see whether the shells are bonded into the ribs or not, a fact which is essential for him to know in making his calculations. The Vatican authorities kindly allowed us to remove the plaster in eleven places. The results will appear later on in Mr. Hafner's report. Mr. John R. Morron, President of the Atlas Cement Co., has presented us with ten barrels of his best cement for repairing certain portions of St. Peter's. It will interest you to know that some of the cement has already been used in restorations which are being made on the façade. Hafner's copy of Michelangelo's model of the dome of St. Peter's, which Sig. Ranieri, who built the Academy, is making, is a splendid piece of work and is to be delivered in a few days.

"An event of importance has been Mr. Mead's visit. He and Mrs. Mead arrived last Wednesday and they left last Saturday for America. Mr. Mead went through the studios, and both Mr. and Mrs. Mead lunched with the Staff and Student body on Saturday.

"Other visitors were Prof. David S. Smith of the Jury on Musical Composition, Ex-Senator Theodore E. Burton, who has been a contributor to the Classical School for many years, and the artist Mr. Frederick Dielman.

The gifts of the month were: Mrs. Donald W. Brown, for Concert of last Spring, $100; Prof. Charles A. Carruth, for Library, Lire 450; Ex-Senator Theodore E. Burton, for museum, Lire 50.

"We have a splendid lot of Professors and Fellows for the new year. Every room in the main building is for the first time occupied by our Professors and our own Fellows, and there are three women Fellows from contributing organizations in residence at the Villa Aurelia, which is the maximum number of women we can take into residence. Thus we start the year propitiously."

From a letter from Mr. John C. Rolfe, Professor in Charge of The School of Classical Studies, we quote the following:

"The work of the School began on October 3, with a general meeting of all the students, at which the plan of the year's work was outlined. There are seventeen students registered. Of these three are fellows of the Academy, four hold fellowships from universities in America, six are graduates or post-graduates of American colleges, and four are visitors, three of whom are university professors. Six of the students are already engaged upon special work of a technical character, and several others are planning to begin such work in the near future.

"As usual a varied and somewhat full program has been offered, including topography, sculpture, vases, and Etruscan archaeology, but attendance is required only on the lectures preparatory to the weekly Campagna trips. I have found it advisable to offer an introductory course in Latin inscriptions, attended by eight students, partly to give some acquaintance with the subject to those who have had no previous work in epigraphy, and partly to prepare some of them for the more advanced work beginning in January. A liberal amount of time is also set aside for consultation with students who are engaged in research.

POWER SHOW OF INTEREST TO SPECIFICATION WRITERS AND PRACTICAL MEN

IT WILL be well worth the while of any specification writer or any one interested in the practical or engineering side of architecture to visit the Second National Exposition of Power and Mechanical Engineering to be held December 3-8 at The Grand Central Palace, New York.

The list of exhibitors shows that there will be much of value and interest for the man who is concerned with mechanical equipment as a part of architectural work as well as for the man who specializes in power and mechanical engneering. This is a side of architectural work to which an increasing amount of attention must be given, and an exposition of this kind affords a special opportunity for the architect, and members of his organization to familiarize themselves with the advances in this field with the expenditure of a minimum of time. In addition to hundreds of exhibits there will be a comprehensive program of twenty-five motion picture films that present vividly various interesting industrial and engineering processes.

COMPETITION FOR PARIS PRIZE

THE first preliminary competition for the Paris Prize of the Society of Beaux-Arts Architects will be held January 5, 1924. The winner of this prize receives a free course in architecture in Paris. All desiring information about this competition should write immediately to the Chairman of the Paris Prize Committee, Care of The Beaux-Arts Institute of Design, 126 East 75th Street, New York City.

ARCHITECTURAL BOWLING LEAGUE

IN THE November issue an account of the reorganization of "The Architectural Bowling League" was given together with a report of the standing up to the time of going to press. Below is given the standing to November 20.

		Total games played	Won	Lost
1.	B. W. Morris	11	1	8
2.	McKenzie, Voorhees & Gmelin	11	9	2
3.	Cass Gilbert	11	6	5
4.	Donn Barber	11	0	11
5.	McKim, Mead & White	11	4	7
6.	Thos. W. Lamb	11	7	4
7.	W. L. Stoddart	8	4	4
8.	Sommerfield & Steckler	8	2	6
9.	Dwight Robinson (Arch. Dept.)	8	7	1
10.	Alfred C. Bosson	8	6	2
11.	J. Gamble Rogers	8	4	4
12.	Warren & Wetmore	8	6	2

High Team Score, 798, by McKenzie, Voorhees & Gmelin.

High Individual Score, 201, by Lyman of Warren & Wetmore.

High Individual Average by Ackerman of McKenzie, Voorhees & Gmelin.

N. T. Valentine, Sec., Warren & Wetmore.

P. Lynch, Treas., Central Blue Print.

AN ACKNOWLEDGMENT

DURING the past two months we have written to many hundreds of PENCIL POINTS subscribers in all parts of the country asking them to send us data regarding their own localities for our files. The response has been highly gratifying and since the number of our correspondents is so great that it is impracticable to express our appreciation by means of individual letters, we take this opportunity to thank all who have helped us in this work for their splendid co-operation.—PENCIL POINTS.

DESIGN IN THE DRAFTING ROOM

(*Continued from page* 57)

retracing the originals. This will in no way belittle the value of draftsmanship, nor necessarily be over commercial.

Figure 10 shows a study of the elevation for a parish house. This drawing illustrates a very interesting and effective method of development study. No hard lines have been used, but the free-hand pencil lines form the shape and mass by being carried to an equal stopping point without being bound or received against hard lines. The designer has worked with the image of the completed work before him, and the brick, texture, proportionate sizes of openings, and carefully studied scale have been well considered and worked out, and the drawing does not show any unnecessary lines for particular effects.

Figure 11 shows a sketch study in perspective of a country residence. The ensemble is complete and the roof levels and intersections charmingly worked out. The entire composition is well tied together by the design of the garden court, architectural walls and balustrades. The wall surfaces in relation to the openings are studied and graceful and form a very pleasing effect. The drawing itself connects well for good drawing composition. The forecourt and entrance splendidly emphasize the light effect on the walls. The sketches show no undue effort in obtaining the necessary indication and tone values. The use of free-hand perspective in drafting room design is of great value, offering perhaps the best means of study for ensemble. The drawings need not be "finely drawn" or made laboriously, just a few lines with the shade values strongly marked will tell the story well in three dimensions.

Figure 12 shows a free-hand part plan and elevation study for an entrance door feature of a country residence. This is a very interesting drawing. Much time is often wasted by making sketch studies too much of a T-square and triangle operation. Values are what count and the best way to obtain the desired freedom of imagination is by the use of a soft pencil which should be handled very much as the painter uses his brush. Train the eye and hand to make every line count.

Figure 13 illustrates a free and bold sketch of the main façade for a country residence. The drawing speaks for itself. How well it calls forth the play of imagination so that the actual house appears to grow, and that it must be placed with terraces, steps, trees and gardens in the exact place where the designer intended that it should be placed. The manner of representation in this case was chosen to give the client a more clear idea of the design than would have been conveyed by an elevation purely in the nature of a working drawing and without the touches that give realism.

To be able to express constructive thought by means of drawing is a wonderful gift, to be developed by the architect and draftsman through constant study and practice.

THE SKETCH PROBLEM

(*Continued from page* 44)

sion; it is best to start with the Class B sketches and work through those in Class A to the prize problems; do not hesitate to try for these prize problems as soon as you are eligible. One seldom wins one of these prizes on the first trial—by the time he is making his second attempt he knows better what is wanted, and is more able to dispose of his time to advantage.

First, it is needless to say, a man's "kit" must be ready beforehand—pencils, erasers, water-colors, transfer paper, the final paper or board, "T" square and instruments, etc., etc. No time can be taken from the nine hours for this purpose.

Then, read the program, and reread as often as necessary to understand what it is all about,—what are the important requirements, what is to be the character. You must form a picture in your mind of what you are after, of the solution as a whole without thinking of details. Next you must find out what are the strokes and lines that will bring out this character.

People use different language to express thought; draftsmen use different mediums to express an idea. Any of these mediums will be good if it will express the thought; but certain things are essential in a good sketch problem—you must fill the paper, or, to put it in another way, you must compose the sheet. The lines on your drawing must not lead the eye out of the picture, but should focus it on the thing that is to be seen; the sheet must always count as a sheet—as a whole. Decide beforehand what medium you will use, so that you will not waste part of the nine hours to make this decision. It is wise to find out in your early sketch problems what is your best medium—and then use it and become proficient in it.

It is important to get the proper scale:—mark in the corner of the paper a drawn scale to keep it in mind. Once you have it in mind you will not need again to use a scale.

Now, as to the division of your time. How long shall you study the program, how long study at a small scale; when is the proper time to start the final drawing? Each man has a different way of working; some can speed up more effectively in the early stages of the process, and are sluggish in the actual drawing; others will be the reverse. In making a few sketch problems you will begin to understand your own characteristics in this. Until you "know yourself," keep at least six of the nine hours for the final presentation. It is most important to have plenty of time for this, for *whatever else a sketch problem must be, it must be completed when the time is up.* No matter how good your idea, unless it is adequately presented it will not interest the jury.

In presenting this idea, detail—carefully drawn detail—is not necessary. All detail is indicated, but it must look like something,—must be reasonable. The Class A sketch problem shown in Figure 11, shows a very free indication of detail, quite different from that of Figure 12, where everything is drawn, rather than indicated although drawn free-hand. One thing which is important in the sketch problem, as in any composition, is to have a dominant feature, and I mean here a dominant feature on your sheet arrangement, quite aside from the design of the piece of architecture which is being presented.

A study of the examples shown here, as well as of the premiated work published after each judgment, will be of great value. It is interesting to compare these with the French example shown in Figure 13—a sketch submitted in the first preliminary for the "prix de Rome" at the Ecole des Beaux Arts. But, after all, to *do* a good sketch problem, one must *have done* sketch problems,—the more the better.

QUAINT SPECIFICATIONS

FROM one of our readers, Mr. C. R. Stephany, specification writer, with Gordon & Kaelber, Architects, Rochester, N. Y., we have received an interesting clipping from the *Rochester Democrat*, quoting the specifications for one of the oldest, if not the oldest, of frame buildings now standing in this country, the Quaker Meeting House in Easton, Maryland. This building was erected two hundred forty years ago.

The old contract for the building reads: "To agree with ye carpenters for ye building of ye said house 60 foote long and 44 foote wide, and to be strong, substantial framed work, with good white oak sills and small joyst, and ye upper floors to be laid with plank and ye roof to be double raftered, and good principal rafters every ten foote, and to be double studded below, and to be well braced, and windows convenient, and shutters, and good large stairs into ye chambers which chambers are to be forty foote square at each end of ye house, and twenty foote between them, and for other conveniences to be left to direction of ye aforesaid friends."

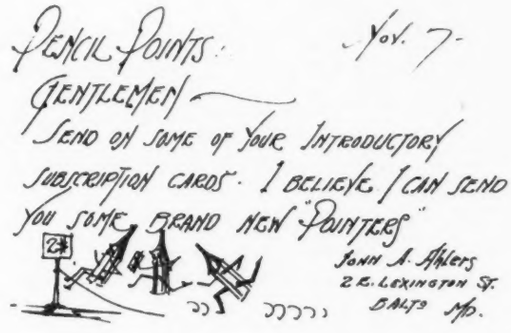
How it was possible to build two rooms "forty foote square with twenty foote between" in a house sixty feet long is something of a mystery.

HERE *and* THERE *and* THIS *and* THAT

Editor's Note:—In our January issue we hope to be able to announce to our readers that arrangements have been concluded with the one man in this country best qualified to conduct this section of PENCIL POINTS. *In the meantime the general purposes of this department are being set forth so that our readers may send in suitable contributions for publication under this heading.*

In establishing this column or department it is our purpose to provide a place in PENCIL POINTS *for the publication of miscellaneous items, many of which are too short for articles, and many of which, in the form of letters, have heretofore been omitted from the paper because of lack of space. Contributions are solicited on any subject having to do with our field. They may be technical or non-technical in character, verse, sketches, caricatures, personal items, news items, opinions, kicks, all are welcome. So sharpen up your pens and pencils and send your stuff along.*

JOHN A. AHLERS, a good PENCIL POINTER from Baltimore, sends this on a postal:



Good work, John!

WHO will give Samuel Davids, rehabilitated war veteran, a chance to earn a living? Here is his story as told by himself.

Washington, D. C.,
Nov. 15, 1923.

"PENCIL POINTS:
Dear Sirs:

Some time ago we became acquainted and you did me a very good turn, which was much appreciated by me. I am going to ask you to do one more—a little harder than the last one. As I have previously told you, I am a disabled war veteran and being rehabilitated by the United States Veterans' Bureau in Washington, D. C., where I am making my home. I was notified by the Bureau that I would be cut off from the pay-roll on December 1, 1923, as being rehabilitated as a copyist architectural draftsman. I have a sick wife and two children to take care of and a hard winter ahead of me. I am not asking you for any financial aid, but would like you to help me in this way. I can read plans thoroughly and do tracing and copying—some construction work or superintend same. I am a strictly sober man and would like to secure a position where there is chance for promotion—salary to be a fair one to start with and to enable me to support my family. I prefer Washington, D. C., or some nearby city. Thanking you for your interest in advance and trusting that you will be able to secure me a position commensurate with my accomplishments, I remain,

Sincerely your friend,
(signed) SAMUEL DAVIDS,
2206—16th St. S. E.,
Anacostia, D. C."

PROFESSOR WILLIAM EMERSON of the Department of Architecture, Massachusetts Institute of Technology, has been an enthusiastic supporter of PENCIL POINTS from the beginning and finds himself especially interested in some of our recent publications. We print herewith a letter recently received from him.

"Again I write to fulfill my obligations to you and to PENCIL POINTS, a debt which is steadily growing, as PENCIL POINTS is to my thinking doing a service to the profession in general and to the architectural beginner in particular that is of very high value, through the publication of such books as 'L'Architecture Toscane' and the 'D'Espouy Frangments d'Architecture Antique' in such form as to make them available for the most limited purse. I have been carefully through both of these books and highly commend both the presentation and the little commentaries presented by Mr. Van Pelt concerning the subject matter of the different plates so that these buildings assume some individuality in the eye of the professional reader. I should like to order herewith additional copies of both these two books for our architectural library, and shall be obliged to you if you will bill them to the Department of Architecture, Mass. Institute of Technology, Boston. Thanking you again for this added service, and hoping that you will let me know in what way I can further the excellent work you are doing.

Yours sincerely,
(signed) WILLIAM EMERSON."

THE Registration Cards are coming in steadily but there are still many draftsmen identified with the building industries who have not yet taken the trouble, both in our interests and their own, to send in their registrations. As we have previously explained, we regard it as highly desirable that a complete roster of all men engaged in drafting room work should be in existence in this office for the convenience of the profession generally. There is absolutely no cost attached to this registration and those registering may be absolutely sure that no embarrassing or improper use will be made of their names. It has frequently been possible for us, through our office records, to forward mail where the sender desires to reach a certain draftsman either for business or personal reasons and has lost track of his whereabouts. The more complete our list becomes, the better service we can render in this respect. So if you have not yet registered, please send for a card and take the necessary two minutes to fill it out and send it in.

THIS department closes for the press on the fifteenth of each month. Contributions should be sent to the editor of PENCIL POINTS. For the best contribution each month a ten dollar bill will be mailed the day the magazine is published. Other contributions, if found suitable, will be published and those not considered available will be returned if such request accompanies the contribution.

If you are in doubt concerning the availability of any items you have in mind, send them along and let's look them over.

THE SPECIFICATION DESK

A Department for Specification Writers

MISCELLANEOUS ITEMS OF CONSTRUCTION, PART XIII.

By Otto Gaertner

In this series of notes Mr. Otto Gaertner, A.I.A., Associate Member American Society of Civil Engineers, is treating of a number of the minor matters of construction that are troublesome unless the architect happens to have met a similar problem previously—matters of a more or less special nature.—Ed.

Garages (Continued)—It is well to remember that where the machine room is at the top of the shaft the headroom should be not less than six feet and six inches for small elevators, but if possible eight feet. The saddles at the doors generally project one inch into the shaft and are beveled on the under side so that nothing can get caught under the projection when the car rises. There is generally three-quarters of an inch or so clearance between the edge of the sills and the platform of the car. Space must be allowed at the top and bottom of the shaft for over travel. The amount of space required by building codes and ordinances depends upon the speed of the car, the recommended distance being from three to six feet at the top with two feet additional for clearance, and from one and one-half to five and one-half feet at the bottom with two feet additional for clearance. It will generally be found that three feet top and bottom will be sufficient over travel but the code requirement will govern. Also a pit extending four feet below the lowest landing will generally be acceptable but five feet will give more space for oil buffers under the car and counterweights.

A substantial iron or steel grating must be provided directly under the sheaves at the top of every elevator shaft in New York. If the elevator machine is over head it should be supported on a concrete slab over steel beams supported on the shaft walls or on the structural steel of the building. Planks two inches thick laid on steel beams are sometimes permissible. It is well to allow thirteen to fourteen feet from the top landing to the under side of the sheaves above and more if possible even when not required by law.

All parts of the elevator machinery should be properly enclosed, but ample clearance should be left for access to limit stop devices, motor bearings, oil cups and all movable parts requiring oiling or other attention. In addition, when the machine is located at the bottom of the shaft it may be necessary to protect it with a substantial pit pan.

Substantial buffers of the oil, pneumatic, or spring type should be provided under the elevator car and under the counterweights. On account of the short travel and low speed, the sidewalk type elevator need not have them. Spring bumpers are used for speeds of over fifty feet per minute, but it is generally conceded that for elevators with speeds exceeding three hundred and fifty feet per minute, substantial oil buffers should be provided. The sidewalk type of elevator is often a hand power lift but where it is extensively used the electric type is essential. They are not often adaptable for garage purposes, that is for lifting or lowering vehicles, on account of the sidewalk area which they obstruct when in use. If they are not placed on the sidewalk, but are kept within the building lines as when they are placed in a court, there is no objection to them. A number of them have been installed in this way, their capacities being from one to six thousand pounds and their speeds being from twenty-five to fifty feet per minute. For the more speedy type of elevator the bumpers must be designed according to the speed and on the supposition that the car is fully loaded. For plunger elevator installations provision must be made to stop the plunger as well as the car. Bumpers or buffers should be located symetrically with reference to the center of the car.

The car and counterweight guide rails should be of steel or iron fastened to the sides of the shaft with wrought iron or steel brackets. The size of the rails and the strength and the spacing of the brackets should be such as to safely withstand the application of the safety when stopping a fully loaded car. Wooden guides are sometimes used for freight elevators having less than one hundred feet travel and having less than a speed of one hundred feet per minute but they are not recommended and in some localities they are not allowed by local ordinances. All guides should be run high enough so that the car shoes will not run off in case the overtravel is exceeded and they should rest on a secure support at the bottom. Where safety devices operate on the rails, the guiding surface of the rails should be finished smooth and the joints tongued and grooved or doweled. Special attention must be paid to the rail supports at a point where the guide shoes come in contact with the guides when the car is at a landing. The guides should be supported so that the deflection does not exceed one quarter of an inch under normal operation. Bolts for fastening the supports should be of ample size and suitable for the material to which the supports are to be fastened.

Ropes or cables are generally of iron or steel without covering except that marline-covered cables are used where there is any special hazard or liability to corrosion. Ropes of other materials are permitted for hand power lifts, and chains instead of ropes are satisfactory for sidewalk lifts. The length, size, and winding of the ropes depends upon the type of elevator machine used. The ropes and cables should be tagged to show the diameter and strength of the material of which they are made and the date of installation. Allowance should be made for defects and wear, suitable factors of safety being allowed. They should frequently be inspected and, in the case of cables, lubrication should be attended to. At the car and counterweight ends of the ropes equalizer arms or springs are recommended.

The counterweights are generally composed of sections bolted together by at least two tie rods passing through holes in all the sections and having lock nuts at the ends secured by cotter pins. When necessary the counterweights shall have metal enclosing shields.

Elevators for carrying automobiles should have car platforms of ample strength to support with safety at least seventy per cent of the live load concentrated equally at any two points fifty-six inches apart on a line parallel with the entrance doorway of the car.

(*To be continued*)

SPECIFICATIONS FOR HOLLOW STEEL DOORS

Made by

LAWTON-STEPHENS CO., INC.,

427 Marcy Avenue, Brooklyn, N. Y.

Successors to Grinden Art Metal Company.

Specifications—All doors to be of size and design as shown on door schedule and drawings, of LAWTON-STEPHENS CO., Inc., manufacture, constructed throughout of open hearth, cold rolled, patent leveled furniture steel. They shall be 1¾ in. thick, 5-in. stiles and rails, except bottom rail which shall be 10 in. in height, and be welded at all points of intersection. Stiles and rails to be of No. 18 gauge steel, with suitable asbestos or cork filler; panels to comprise two sheets of No. 18 gauge steel with suitable asbestos or other filler, and mouldings to be cold drawn of No. 20 gauge steel. Mouldings should be interlocked with and into these stiles and rails, and where doors are glazed be provided with loose steel stops arranged to receive the glass.

If Underwriters' doors are required, they should be so specified in which event, stiles and rails are lined with asbestos, with Z-bar or other suitable spreader.

Jambs may be No. 12, 14 or 16 gauge, one-piece combination buck and frame, or No. 18 gauge and installed over No. 12 gauge steel bucks or over wooden bucks. With the last named construction, trim is separate and can carry, as with the jambs, baked enamel finish, either plain or grained as desired.

Door transoms, base, chair rail, picture or wire mouldings may be had either in prime finish and finished afterwards at the building by the painting contractor, or in baked enamel finishes, either plain color, stippled or grained to imitate wood.

(*Advertisement*)

PUBLICATIONS OF INTEREST TO THE SPECIFICATION WRITER.

Any publication mentioned under this heading will be sent free, unless otherwise noted, upon request, to readers of PENCIL POINTS *by the firm issuing the publication. When writing for any of these items please mention* PENCIL POINTS.

Flush and French Doors.—Catalog F. Illustrated with many full-page color plates showing full line of panelled and plain doors and French doors. Details of construction and plates showing interior treatment. 80 pp. 8½ x 11. Roddis Lumber & Veneer Co., Marshfield, Wis.

Architectural Specifications.—Finishes, enamels, wall finishes and stains. Portfolio including specifications for exterior and interior work. Color samples. 10½ x 12. O'Brien Varnish Co., South Bend, Ind.

Exterior Lighting Fixtures.—Catalog 4H. Profusely illustrated showing full range of exterior lighting fixtures for all requirements. Hundreds of designs. 96 pp. 8½ x 11. Smyser-Royer Co., Philadelphia, Pa.

Architectural Granite.—Booklet containing color plates and samples of various granites showing different textures and finishes. Moulding profiles and complete specifications. 8½ x 11. National Building Granite Quarries Assn. Inc., 31 State St., Boston Mass.

Crittall Universal Casement.—Catalog 22. Illustrations in sepia showing many applications of casement windows for all types of buildings. Detail drawings and complete specification data. 9 x 12. 76 pp. Crittall Casement Window Co., Detroit, Mich.

Buckeye Heating and Ventilating Units.—Bulletin No. 122. Contains engineering data on the subject. Tables, detail drawing, typical layouts and specifications. 32 pp. 8½ x 11. Buckeye Blower Co., Columbus, Ohio.

Metal Lath Data Book.—Handbook on the subject of the application of metal lath to modern buildings. Many detail drawings, much practical data on construction of partitions, walls, floors, roofs, ceilings, etc. 48 pp. 8½ x 11. Truscon Steel Co., Youngstown, Ohio.

Specifications for Stucco Work.—Covers uses of Kellastone Stucco. All finishes and conditions are considered. 18 pp. 8 x 11. National Kellastone Co., 155 E. Superior St., Chicago, Ill.

Grading and Dressing Rules for Douglas Fir, Sitka Spruce, Red Cedar and West Coast Hemlock.—Handy pocket size 4 x 9. 10 pp. West Coast Lumbermen's Assn. Seattle, Wash.

Solid Steel Sash.—Catalog E 22. Data on steel sash and doors including sections and all other necessary information. 8½ x 11. 24 pp. Bogart & Carlough Co., Patterson, N. Y.

Flex-Or-Crete.—Description and specifications for architects, engineers and builders. Loose-leaf portfolio covering data on sub-floors under wood, sub-floors under linoleum and sub-roofs. 34 pp. 8½ x 11. Flex-Or-Crete Corporation, Earle Street, Boston 42, Mass.

Asbestos Protected Metal.—Bulletin 71. Describing this metal and its uses for industrial buildings. Much engineering data, diagrams and sections. 24 pp. 8¼ x 11. H. H. Robertson Co., Pittsburgh, Pa.

Brief Wood Finishing Formulas.—Loose-leaf on heavy cards, suitable for reference and filing, specifications. 16 pp. 8½ x 11. Berry Bros., Detroit, Mich.

Specifications for Metal Lath Construction.—Covers application of this material in all types of buildings. Detail drawings showing construction. 16 pp. 8 x 11. North Western Expanded Metal Co., 407 So. Dearborn St., Chicago, Ill.

Linoleum Data Book.—Loose-leaf portfolio covering subject of linoleum in relation to modern buildings. Color cuts, samples. 36 pp. 8½ x 11. W. & J. Sloane, 5th Ave. & 47th St., New York City.

Catalog of Drafting Room Supplies.—Comprehensive handbook covering all types of supplies and equipment required in the drafting room. Completely indexed. 384 pp. 6 x 9. New York Blue Print Paper Co., 96 Reade St., New York City.

Cork Insulation.—Specifications sheet covering subject of cork insulation. 8½ x 11. United Cork Companies. 50 Church St., New York City.

Sash Cord Information and Specifications.—All information required by the architect to specify proper size, and weight of cord. 8½ x 11. Samson Cordage Works, Boston, Mass.

Standardized Unit System for Kitchens.—Typical layouts and descriptions of full line of kitchen conveniences, medicine chests, etc., including large sheet containing detail drawings and dimensions. 8½ x 11. 12 pp. Wasmuth-Endicott Co., Andrews, Ind.

Water Supply and Sewage Disposal Systems.—Specifications covering necessary equipment for these purposes. Complete data. 7¾ x 10½. 40 pp. Kewanee Private Utilities Co., Kewanee, Ill.

Non-Cracking Terrazzo Flooring.—Data sheet showing improved method of laying floors of this type introducing new factor in floor design. Diagrams and full information. 8½ x 11. L. Del Turco & Bros., Harrison, N. J.

Blabon Art Linoleums.—Styles for 1024. Profusely illustrated Handbook containing all information on the subject. 132 pp. 3¼ x 8½. The Geo. W. Blabon Co., 212 Fifth Ave., New York City.

Linotile Floors.—Booklet illustrated in color showing application of this material to various types of buildings. Diagrams, specifications. 44 pp. 6¼ x 9¼. Armstrong Cork & Insulation Co., Pittsburgh, Pa.

Published by the same firm: Reducing Vibration and Noise, permanent Floors for Refrigerated Lines and Tanks, and Armstrong's Cork Tile. 32 pp. 5¼ x 7¼.

Glass Lined Laundry Chutes.—Descriptive booklet with data sheet, diagrams, etc. The Pfaudler Co., Rochester, N. Y.

Bloxonend Flooring.—Specifications for architects and engineers. Complete information on wood flooring for heavy duty. 8½ x 11. Carter Bloxonend Flooring Co., Kansas City, Mo.

Bishopric Specifications.—Working details and specifications covering stucco base, plaster base and insulating base. Complete information for applying under various conditions. 20 pp. 7¾ x 10½. Bishopric Mfg. Co., 110 Este Ave., Cincinnati, Ohio.

Copper—its effect upon steel for roofing tin.—Statement of facts and tests of various alloys. Note on construction of roofs with four full-page plates showing details of construction. 30 pp. 8½ x 11. American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

Metal Conduit Specifications.—Data booklet on the subject. 32 pp. 6¼ x 9¼. Enameled Metals Co., Pittsburgh, Pa.

Waterproofing Specifications.—Specifications covering the Hausling System of waterproofing for various uses. Standard filing size. Anti-Hydro Waterproofing Co., Newark, N. J.

Artists' Pigments.—Their chemical and physical properties. A book on this subject by an admitted authority. Of the utmost importance to those who desire permanence in color work. 238 pp. 6 x 9. Bound in cloth. Price postpaid $2.50. F. W. Weber, 1220 Buttonwood St., Philadelphia, Pa.

Venus Pencil in Mechanical Drafting.—Booklet for engineers, draftsmen and others by Harry W. Jacobs. Much useful information illustrated by many drawings. 16 pp. 6 x 9. American Lead Pencil Co., 220 5th Ave., New York City.

Roofing Specification.—Bird's extra heavy built-up roof for application over sheathing. 8½ x 11. F. W. Bird & Son, East Walpole, Mass.

Karnack Waterproofing.—Basic specification covering subject completely. 8½ x 11. Gardiner & Lewis Inc., 30 Church St., New York City.

Soss Invisible Hinges.—Booklet showing details and specification data. Hinges for furniture, cabinets and general use in buildings. 24 pp. Soss Mfg. Co., Grand Ave. & Bergen St., Brooklyn, N. Y.

Instruction Sheet.—Details of standing seam horse head zinc roofing. New Jersey Zinc Co., 160 Front St., New York City.

Improved Mechanisms in Builders' Hardware.—Complete catalog showing detail drawings, and instructions for installing mechanical builders' hardware such as casement hinges, casement operators, hinges and pivots, and overhead door checks. Catalog is 6 x 9. 58 pp. The Oscar C. Rixson Co., 1210 Architects Bldg., New York City.

Creo-Dipt Stained Shingle Homes.—Portfolio illustrated. Forty-seven att active homes where Creo-Dipt stained shingles have been used. The Creo-Dipt Co., Tonawanda, N. Y.

Water Mixing Valves.—Illustrated handbook showing thermostatic water mixing valves for showers and a variety of other uses. Diagrams and complete specification data. 32 pp. 7½ x 10½ in. Leonard-Rooke Co., Providence, R. I.

FLOYD W. RAY

FLOYD W. RAY, who recently returned from his studies abroad as holder of the Plym Scholarship, was born in West Virginia. He graduated from High School in Long Beach, California, and later studied architecture at the University of Illinois. His studies there were interrupted by the war. After two years in the service he returned and resumed his studies.

While at school he worked in the office of J. W. Rogers at Urbana, Illinois, where he gained valuable experience. He later worked for T. Beverley Kein, Jr., in Los Angeles.

Mr. Ray has spent a year in travel in France, England, and Italy, devoting most of his time to study in Rome. His home is at Long Beach, California.

One of the pencil sketches Mr. Ray made while abroad is reproduced on the opposite page.

DETAILING STONEWORK

(*Continued from page* 34)

height of a pier just because the stone draftsman did not know what size the base should be to receive the brickwork about it; and conversely, the stone contractor will object to cutting a new pier cap when the bricklayer took some liberty with the figured size in order to save clipping of bricks.

The brick size should be considered carefully in laying brickwork to a pattern. Too frequently bricks laid flat, bricks on edge, and bricks on end are all shown together in a beautiful pattern to small scale, which actually will require joints ranging from one-eighth of an inch to one inch when worked out to the exact sizes of the bricks.

In the making of full size details the architect is sometimes hampered by lack of large table accommodations, and sometimes he uses a table that is not quite true, or a wobbly T-square or a loose-jointed rule, and perhaps the tracer is feeling indisposed. Unequal drying of blue prints is not to blame for quite all of the discrepancies that are found.

(To Be Continued)

A FREE EMPLOYMENT SERVICE FOR PENCIL POINTS READERS

(Other Items on Page 70*)*

Position Wanted by good junior draftsman with 10 months' experience. Student at Pratt Institute, evening class. Salary $18. Age 19. Anthony Hartig, 579 Onderdonk Ave., Brooklyn, N. J.

Junior Draftsman with good knowledge of interior decoration wishes position in architect's office or with interior decorator. Can do secretarial work if required. Box No. 253 Pencil Points.

Position Wanted by architectural draftsman. 2 years college, 5 years' experience, specializing on pen and ink renderings, design, working drawings, etc. Location in city with Beaux-Arts Atelier. Box 256 Pencil Points.

Experienced Man desires connection with good architectural firm or to form a partnership for the practice of architecture. Cornell University architectural engineering. 20 years with good architects and building contractors. Can handle engineering specifications, superintending and the executive end of an architect's practice thoroughly. Box 255 Pencil Points.

United States Veterans' Bureau, 480 Lexington Ave., N. Y. C., states that the following men will be ready for placement as architectural draftsmen on or about December 1st: Edward Liebrook, 29 years old, Francis Irvine, 33 years old, John E. Davis, 23 years old, Gustave Orlich, Nathan Ehrlich, 25 years old, Geo. H. Flanagan, 26 years old, James H. Lott, 33 years old and Edwin Schultz, 27 years old. Applications should be sent to W. J. Strachan, Chief, Rehab. Section, N. Y. C. Sub-Dist. Office.

Young Man wishes position in architect's office. Willing to start at any reasonable salary. Erick Coebbe, White House Station, N. J.

Position Wanted: Architectural draftsman, 15 years' experience, especially high class residential work. South preferred. Salary $60.00 per week. Box 261 Pencil Points.

Architectural draftsman with good general experience, inclusive of designing and rendering, desires to make connection with firm doing good work in the vicinity of New York. Box 262 Pencil Points.

Position Wanted by practical architectural draftsman on office buildings, banks and hotels. New York City only. Ten years' experience. Box 260, Pencil Points.

Wanted at once first class architectural detailer who can take hold of a set of scale drawings and detail the building right through. Mann & Stern, architects, Little Rock, Arkansas.

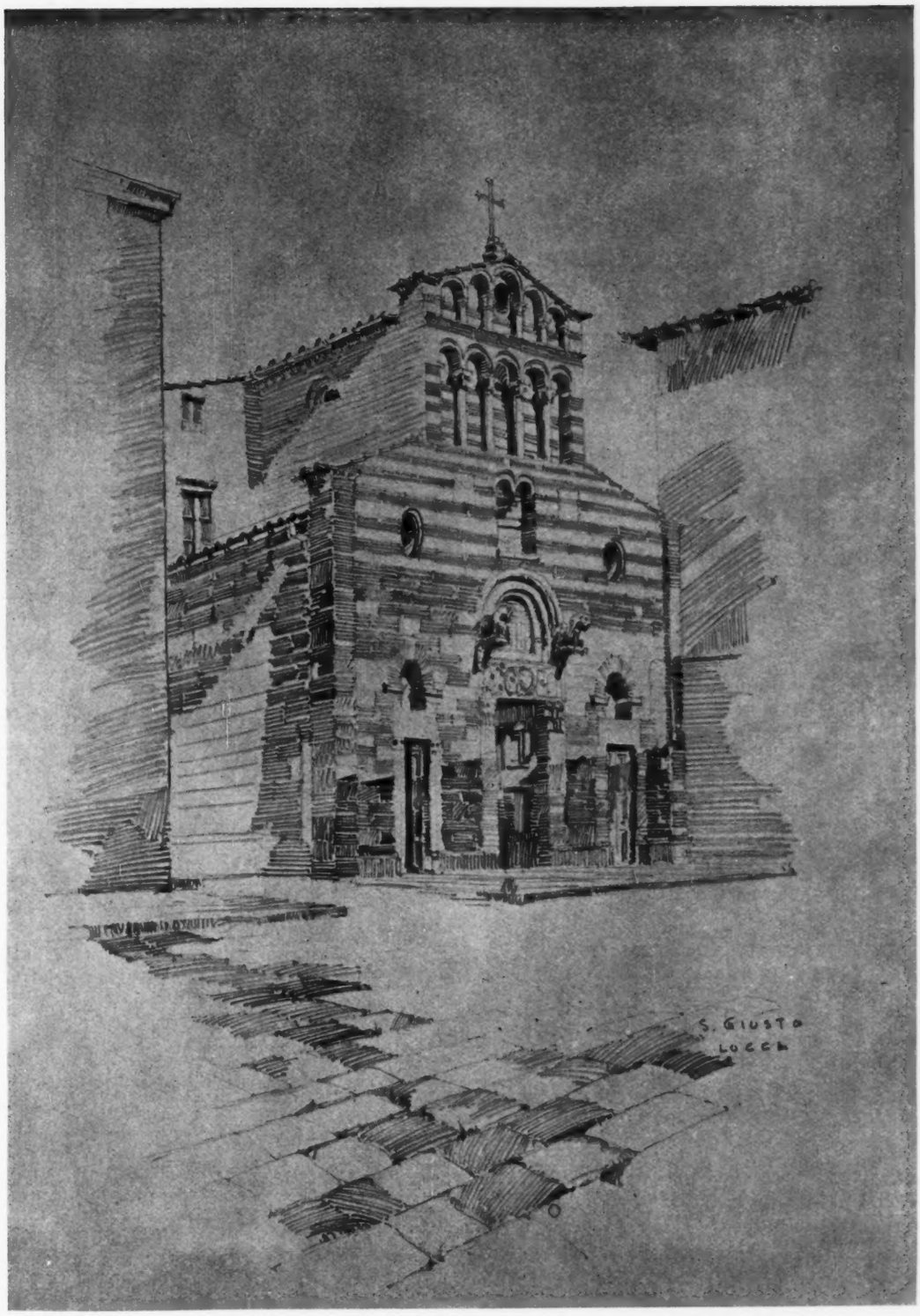
Architect, registered, 35, University man, post graduate degree, twelve years' practical experience all phases of construction, desires association with New York architect who has an extensive and varied practice and can utilize the services of an intelligent and dependable man to assist with the details of administration. Box 265, Pencil Points.

Position Wanted: Draftsman, 22 years old, three years on board, general drafting on speculative small houses and apartments, country houses and bath houses. Desires broader experience. Box 266, Pencil Points.

Position Wanted by young engineer with small architect or contractor. Can draw, estimate and superintend construction, survey, design heating and ventilation systems. Experienced north and south. Seven years' general experience. Box 267, Pencil Points.

Position Wanted: Draftsman with six years of general experience in drafting room, desires position where work of good quality is desired. Sample of work will be sent on request. Box 300, Pencil Points.

Wanted, a capable designer who is familiar with general run of office work and can do water colors. Sanders & Ginocchio, Little Rock, Ark.



Pencil Sketch by Floyd W. Ray. Church of S. Giusta at Lucca, Italy.

PENCIL POINTS

INDEX TO VOLUME IV

January to December, inclusive, 1923

ARTICLES

General Considerations in Specification Writing by Franklin J. Ward ..... Jan.
The Practice of Specification Writing, a Symposium by Architects and Specification Writers.. Jan.
Specifications from a Manufacturer's Viewpoint, by J. B. W. Gardiner ..... Jan.
The Specification Writer and Manufacturers' Literature, by Sullivan W. Jones ..... Jan.
Specifications and Personality, by John Vredenburgh Van Pelt ..... Feb.
The Study of Architectural Design, by John F. Harbeson ..... Feb.-July
The Evolution of a Kenyon Cox Mural ..... Feb.
Sketching in and About the City Otto F. Langmann. Mar.
The Process of Lithography, by Bolton Brown ..... Mar.
The Use of Color in Architecture, by Jules Guerin.. April
Zoning and the Envelope of the Building, by Harvey W. Corbett ..... April
The Garden Architecture Competition ..... April
The Making of Working Drawings, by John C. Breiby ..... May-Sept.
Awards in the Le Brun Travelling Scholarship ..... May
Hotel Architecture from a Hotel Man's Viewpoint, by Roy Carruthers ..... June-Aug.
The Library in the Drafting Room, by John V. Van Pelt ..... June
Qualifying for Registration, by Edward Stotz ..... July
The Technique of Rendering, by Francis S. Swales, Aug., Sept., Nov., Dec.
How to Bind Your Pencil Points, by C. W. Branson ..... Aug.
The Use of Key Stencils in Mural Decoration, by Arthur Crisp ..... Sept.
Drawing Construction Details, by Philip G. Knobloch. Oct.
The Embryonic Sketch, by Henry Oothout Milliken. Nov.
Design in the Drafting Room, by John C. Breiby, Nov., Dec.
Architectural Superintendents' Manual, by Franklin J. Ward ..... Nov.
The Sketch Problem, by John F. Harbeson ..... Dec.

DEPARTMENTS

Queries, a department of questions and answers on architecture, drawing, and related subjects ..... Feb., Mar.
The Specification Desk, a department devoted to matters of interest to the specification writer, Feb.-Dec.

BIOGRAPHICAL SKETCHES

Brief biographies with portraits of draftsmen, renderers, artists, etc., as follows:
John Richard Rowe ..... Feb.
Leoni W. Robinson ..... Mar.
F. Ray Leimkuehler ..... April
Ruth L. Gerth ..... April
Paul F. Simpson ..... May
John Postler ..... June
Perry Coke Smith ..... July
Ernest E. Weihe ..... Aug.
Lee Rombotis ..... Sept.
Arthur F. Deam ..... Sept.
Frank Martinelli ..... Oct.
Isidor Richmond ..... Oct.
Theodore T. de Postels ..... Nov.
Floyd W. Ray ..... Dec.
Arthur L. Guptill ..... Dec.

COVER ILLUSTRATIONS

Renderings and Sketches by the following artists and architects:
Chester B. Price ..... Feb., April, Dec.
G. C. Styles ..... Mar.
Hugh Ferriss ..... May, Oct.
Bernhard C. Greengard ..... June
Vernon Howe Bailey ..... July
Theodore T. de Postels ..... Aug., Nov.
Edward Dixon McDonald ..... Sept.

PLATES

Plates from D'Espouy's "Fragments d'Architecture Antique"; Temple of Jupiter-Stator at Rome; Detail from the Forum of Trajan, Rome; Mausoleum at Halicarnassus; Detail of Mausoleum at Halicarnassus; House at Pompeii; Pompeiian Detail Restoration and Composition by F. Duban; The Coliseum, Rome; Detail of the Temple of Jupiter-Stator, Rome; Detail of the Temple of Augustus and Rome ..... Jan.-Sept.

Villa Pia in the Vatican Gardens, from Letarouilly's "Vatican" ..... May

Detail of Doorway, Period of Louis XIV, Palace of Versailles; Detail of Door, Period of Louis XIV; from Cesar Daly's "Motifs Decoratifs" ..... May, June

Detail of Montalvo Palace, Florence, from D'Espouy's "Fragments d'Architecture du Moyen Age et de la Renaissance" ..... May

Details of the Riccardi Palace, Florence, from "Architecture Toscane" ..... Aug.

Court of the "Old Palace," Florence, from "Architecture Toscane," ..... Sept.

Renderings and Sketches by artists as follows:
H. Van Buren Magonigle ..... Jan., Feb.
Hugh Ferriss ..... Jan.
Chester B. Price ..... Jan.
John R. Rowe ..... Feb., Mar.
Otto F. Langmann ..... Mar.
Chester H. Walcott ..... April
Samuel V. Chamberlain ..... June, Dec.
Greville Rickard ..... June
Albert Kahn ..... July
Kenneth Conant ..... July
Andre Smith ..... July
Ernest E. Weihe ..... Aug.
Theodore T. de Postels ..... Nov.

Studies from Life by Artists as follows:
Kenyon Cox ..... Feb., April
William Cotton ..... Aug.

Plates of Varied Character:
Kenyon Cox ..... Mar.
G. C. Styles ..... April
Wilson Eyre ..... Sept.
Arthur Crisp ..... Sept.
Photograph by Frederick Boissonnas. Oct., Nov., Dec.
John Vincent ..... Oct.
Charles Meryon ..... Oct., Nov.
Muirhead Bone ..... Oct.
D. Y. Cameron ..... Mar., Dec.

Hard Burned

Atlantic Terra Cotta

Tap Atlantic Terra Cotta with a hammer and it rings like metal. Try to scratch it more than superficially with a knife and you break the blade.

Hard burned Terra Cotta has structural strength and little absorption.

The earliest records of mankind have come down to the present day in the form of hard burned clay.

Atlantic Terra Cotta Company
350 Madison Avenue, New York

Southern Factory
Atlanta Terra Cotta Company
Atlanta, Georgia

Largest Manufacturers of Terra Cotta in the World

Detail of Wells Building, Milwaukee, Wis. H. C. Koch & Son, Architects

For Elevator Shafts —Enameled Brick

THE elevator shaft can be made as bright and attractive as an open corridor through the use of Enameled Brick. The well need never be unsightly.

The highly polished, tough, dirt-resisting surface of the brick can be easily and quickly washed down with a brush or damp cloth, thus cutting maintenance to a minimum.

A wide variety of architectural effects can be obtained through bonding, and the introduction of moulded shapes, and the use of color bands.

Standard sized brick, and moulded forms, as shown in the margin, are furnished. Colors may be arranged for with the individual manufacturer. Write for information and data sheet to any member of the Association.

THE ENAMELED BRICK ASSOCIATION OF AMERICA

American Enameled Brick & Tile Co., New York
Hydraulic-Press Brick Co., St. Louis · Tiffany Enameled Brick Co., Chicago

Residence of B. H. Kroger, Cincinnati, Ohio. G. C. Burroughs and J. H. Deeken, Architects. Equipped with Higgin All-Metal Screens and Weather Strips.

Screens that do not mar architectural treatment

WINDOW screens are an essential utility to which the architect must give consideration, not only from the standpoint of durability, but also to prevent obtrusiveness and to safeguard his architectural effects. The artistry of screen designing lies in the degree of inconspicuousness attained.

Higgin designers and Higgin fitters work to this end. They are masters of "the art of the unobtrusive." Higgin Screens, with their narrow all-metal frames and soft-finished antique-bronze wire cloth, easily become a part of any architectural treatment.

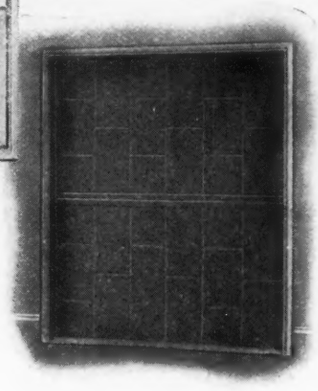
Higgin-trained specialists in all principal cities render helpful advisory service and estimates without obligation; and Higgin fitters install every job without assistance or supervision.

The HIGGIN Mfg. Co.
Newport, Ky.
Toronto, Canada.

Service offices in all principal cities in the United States and Canada.

Look in your telephone or city directory for the address of your local Higgin service office, or write to the home office.

The Penton Press Building
Cleveland, O.
George F. Burrous
Architect
Hunkin-Conkey Construction Co.
Builders



Saving Minutes and Dollars

IN SUCH buildings as that of The Penton Press, PEELLE Freight Elevator Doors are saving time in loading and unloading freight elevators. Their counterbalanced vertical operation gives full clearance of door opening in the minimum of time. The exclusive Truckable feature provides a level, unbroken passage between building floor sill and elevator car.

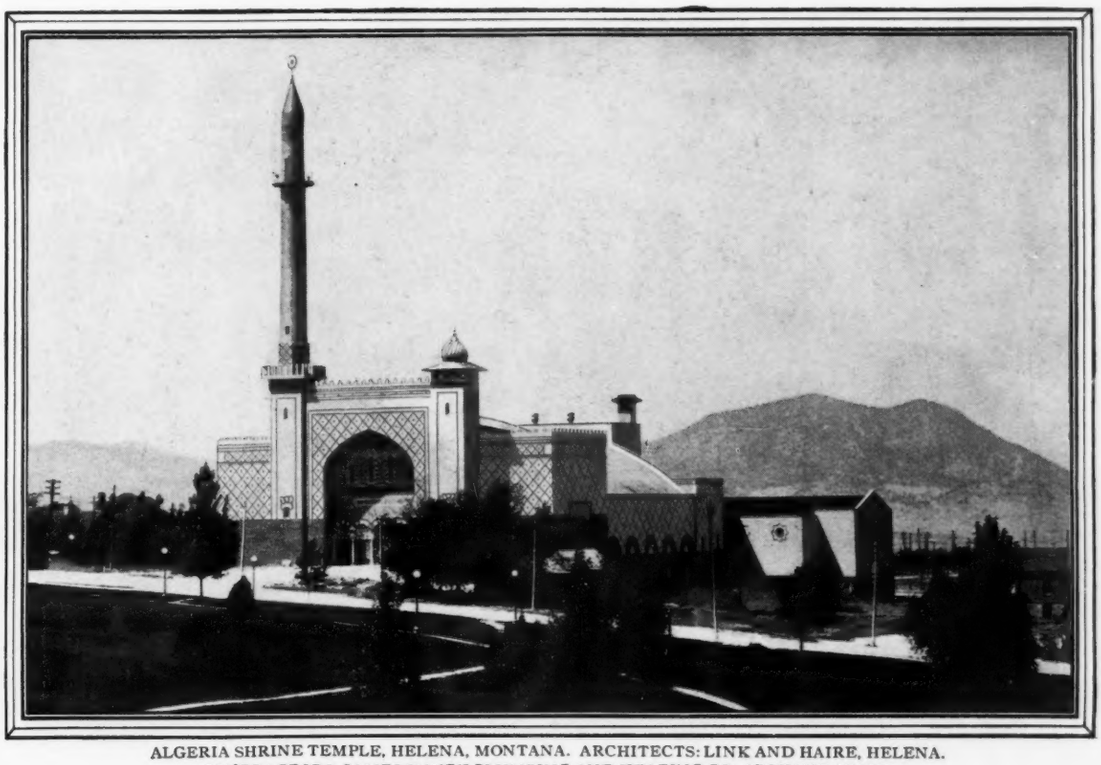
The sturdy scientific construction of PEELLE DOORS saves the dollars usually spent on repairs and replacements of ordinary doors. They are built to endure—to resist the wear and tear of the most strenuous service.

These and many other merits of PEELLE Doors are fully described in the PEELLE catalog. You are invited to send for a copy, as well as the advice of a PEELLE representative.

THE PEELLE COMPANY . . . . . Brooklyn, N. Y.
Boston · Chicago · Cleveland · Philadelphia · and 12 other cities

PEELLE Freight Elevator DOORS

Counterbalanced-Truckable



ALGERIA SHRINE TEMPLE, HELENA, MONTANA. ARCHITECTS: LINK AND HAIRE, HELENA.
CONTRACTORS: JAMES SMYTH PLUMBING AND HEATING CO., SPOKANE, WASH.

UPHOLDING THE IDEAL OF AN ARCHITECT

In many beautiful temples, Crane sanitation appointments sustain the spirit of dignity and comfort. Crane valves and fittings, also, are used for the piping of their sanitation and heating systems and to serve showers, swimming pools and fire sprinklers. All Crane equipment, produced to match the enduring character of these institutions, is simple in design and sturdy in every detail of construction.

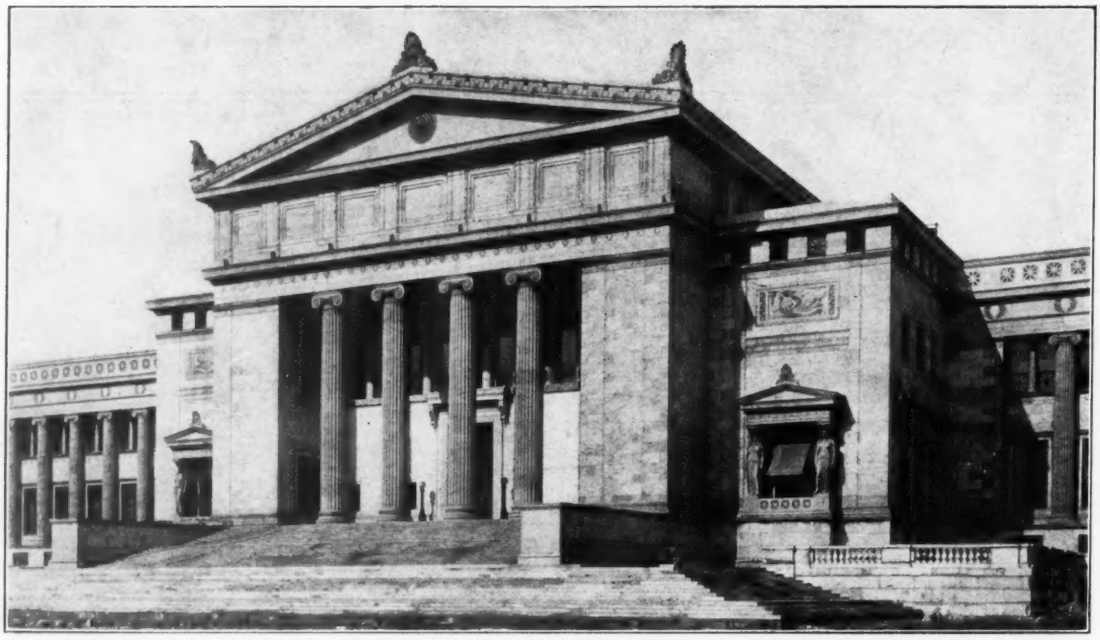
CRANE

GENERAL OFFICES: CRANE BUILDING, 836 S. MICHIGAN AVE., CHICAGO

Branches and Sales Offices in One Hundred and Thirty-five Cities
National Exhibit Rooms: Chicago, New York, Atlantic City
Works: Chicago and Bridgeport

CRANE, LIMITED, MONTREAL. CRANE-BENNETT, LTD., LONDON
CRANE EXPORT CORPORATION: NEW YORK, SAN FRANCISCO
CIE CRANE, PARIS

Crane Radiator Valve No. 220



FIELD MUSEUM
Chicago, Ill.

Graham, Anderson, Probst & White
ARCHITECTS

THE central feature in the development of the Chicago Park Plan is the magnificent Field Museum recently completed by the architects, Graham, Anderson, Probst & White. This structure dominates Grant Park and from it radiate all the features of this park, the lagoon and lake driveway to Jackson Park.

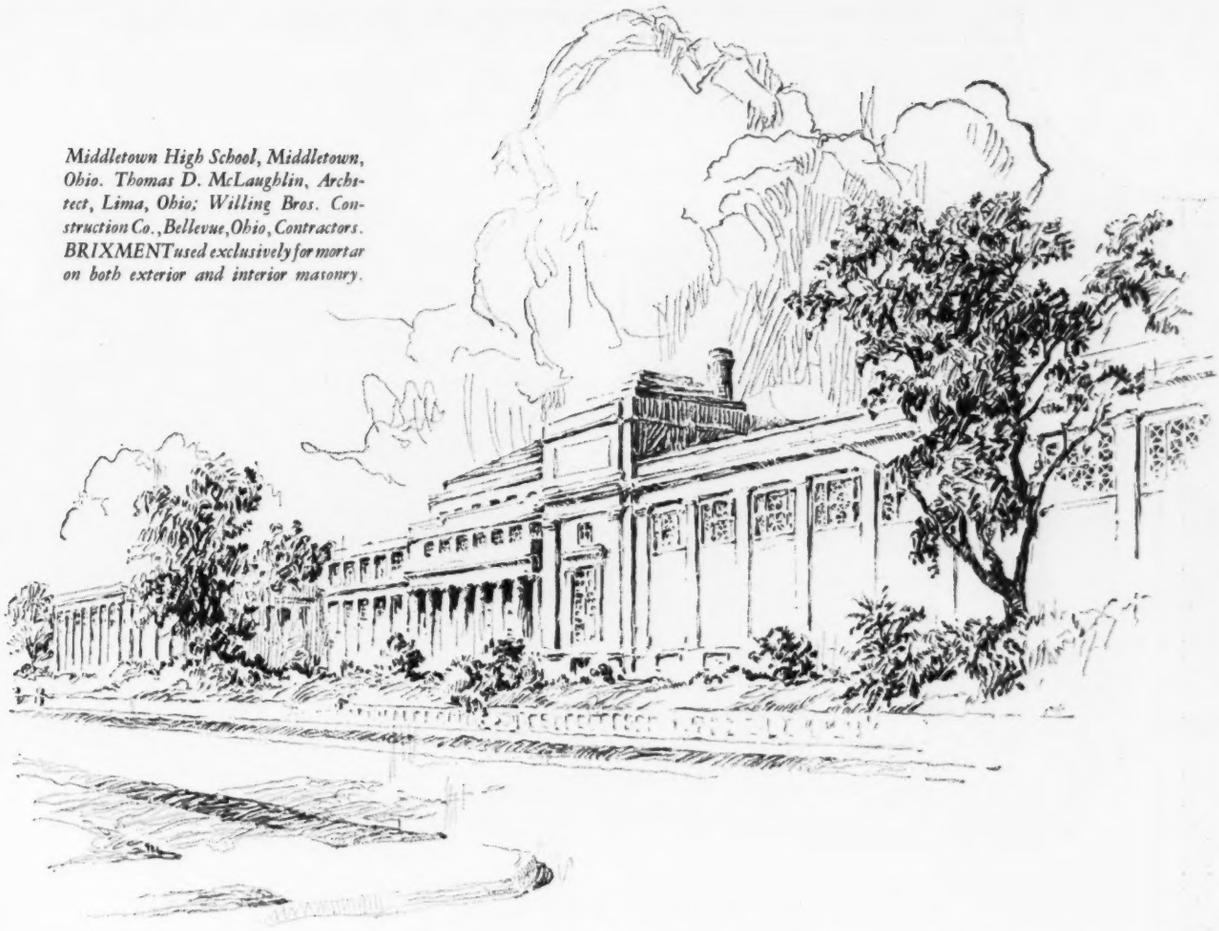
This monumental structure is in keeping with the breadth of view underlying the entire "Chicago Plan" developed under the direction of the late D. H. Burnham. Naturally in harmony with its importance and position it is built of the enduring and beautiful white Georgia Marble. It is the largest marble structure in the United States.

The Georgia Marble Co.

1328 Broadway
NEW YORK

TATE, GEORGIA

Monadnock Block
CHICAGO, ILL.



Middletown High School, Middletown, Ohio. Thomas D. McLaughlin, Architect, Lima, Ohio; Willing Bros. Construction Co., Bellevue, Ohio, Contractors. BRIXMENT used exclusively for mortar on both exterior and interior masonry.

The architect prescribed it, the contractor preferred it, the dealer pushed it

THIS was the condition, as applied to BRIXMENT, that prevailed when the final plans of the Middletown (Ohio) High School were completed. A similar condition exists wherever the unusual advantages of this standard mortar material are known. And why?

Naturally the architect is interested in any justifiable economy that can be effected on behalf of his clients; but he is even more concerned about those qualities that will insure the permanence and architectural correctness of his work. All these essentials he finds in BRIXMENT through exhaustive tests and the results of large-volume use.

To the contractor, especially today when he is confronted by excessive costs in other phases of his work, economy is a vital factor. In BRIXMENT he has discovered exceptional economies in time, labor, material and money.

It is to the dealer's interest to sell a product for which, because of certain exclusive advantages, there is a continuous and growing demand. The almost phenomenal increase in the use of BRIXMENT in foremost construction work throughout the country is tangible evidence of its complete fulfillment of the highest standards of practice—structural, architectural, economical.

No lime. No slaking. Can be used immediately after mixing (one part BRIXMENT; three parts sand).

Write for descriptive booklet and list of well-known buildings in which BRIXMENT has been used exclusively for mortar.

LOUISVILLE CEMENT COMPANY, *Incorporated*, LOUISVILLE, KENTUCKY

BRIXMENT ~ *for Perfect Mortar*

PERMANENCY

IN plumbing fixtures permanency is not denoted by a white surface, but by what material is beneath that surface, how conscientiously and with what skill it is made.

"Tepeco" All-Clay Plumbing Fixtures are the highest development of the potter's art. Ware made basically from clay, highly glazed of surface, admittedly has no equal. You will never find indifference to details, skimping of baking processes or laxity in glazing the trade-marked, guaranteed products of this company.

Architects who test by use continue the specification of our goods. They like the absolute assurance that goes with the "Tepeco" trade-mark.

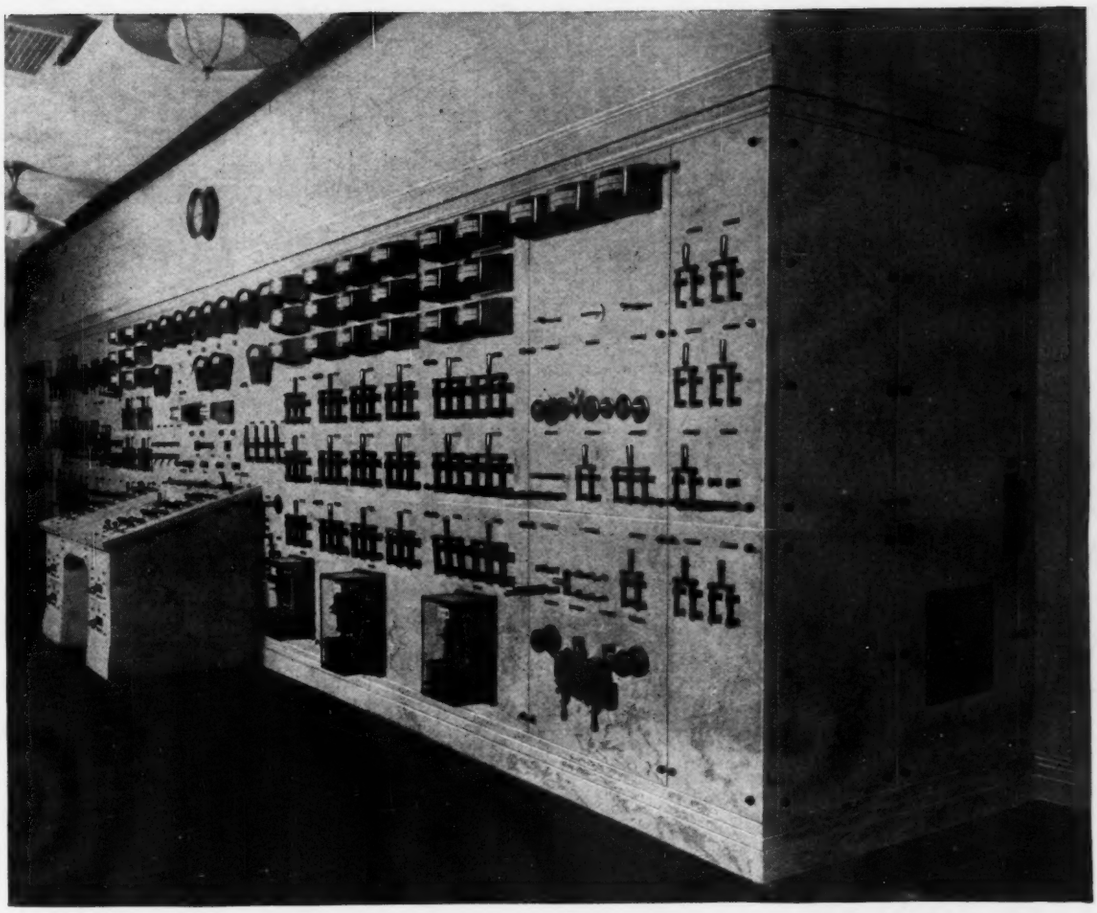
Catalogue R upon request

THE TRENTON POTTERIES COMPANY
Trenton, New Jersey, U. S. A.

NEW YORK BOSTON SAN FRANCISCO

World's Largest Makers of All-Clay Plumbing Fixtures

THE TRENTON POTTERIES COMPANY
TEPECO
TRENTON, N.J. U.S.A.



Bankers Trust Co. Building, New York City. Trowbridge & Livingston, Architects; Meyer Strong and Jones, Consulting Engineers; Mark Eidlitz & Sons, Builders.

Switchboards in Architecture

The practice of architecture requires that every building be provided with electric service. The control of this service is accomplished through a switchboard of some sort, be it an entrance panel, containing only meter and switch in a small bungalow, or a more complicated type of switchboard in large commercial buildings.

Whatever the size or condition of supply or distribution, the General Electric Company manufactures the necessary equipment and has the requisite knowledge and facilities for the construction of a finished product.

The architectural plan or limitations of space may make certain demands which only the best of engineering skill and the broadest of installation experience can satisfactorily meet.

The architectural requirements of a building are most efficiently met when the switchboard not only serves the electrical needs of the occupants but also, in appearance and arrangement, harmonizes with the structure.

This advertisement is part of the story of the building of quality switchboards. Our ambition is to make this story of sufficient interest to merit a place in your file No. 31c2.

General Electric Company
Schenectady, N. Y.

54C-82

GENERAL ELECTRIC

Olde Stonesfield Roofs and Flagging

Gate House
Wm. W. Bodine Estate
Villa Nova, Pa.

Wm. Wayne, Jr.
Architect

OUR REPUTATION IS YOUR SPECIFICATION

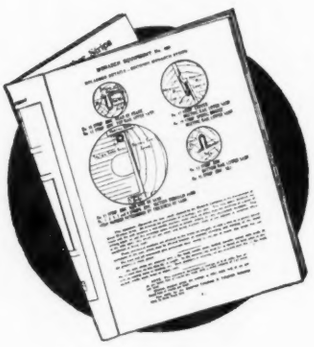
THE JOHN D. EMACK CO.

Home Office:
112 So. 16th Street
Philadelphia

New York
Office:
17 East 49th Street

An Interesting Treatise on Air Infiltration

and Weather Strip Detail



LET us send you this booklet FREE. In addition to being an interesting and helpful guide illustrating the use and application of Monarch Metal Weather Strips, it contains information and data that will prove valuable for your files.

Monarch Metal Weather Strips are the only full floating contact strips on the market. Embodying an exclusive patented feature, they give and take with every movement of the window, yet close the gap securely and permanently.

Write for copy of this Manual today—A. I. A. classification No. 19e14 and tables of b.t.u. losses.

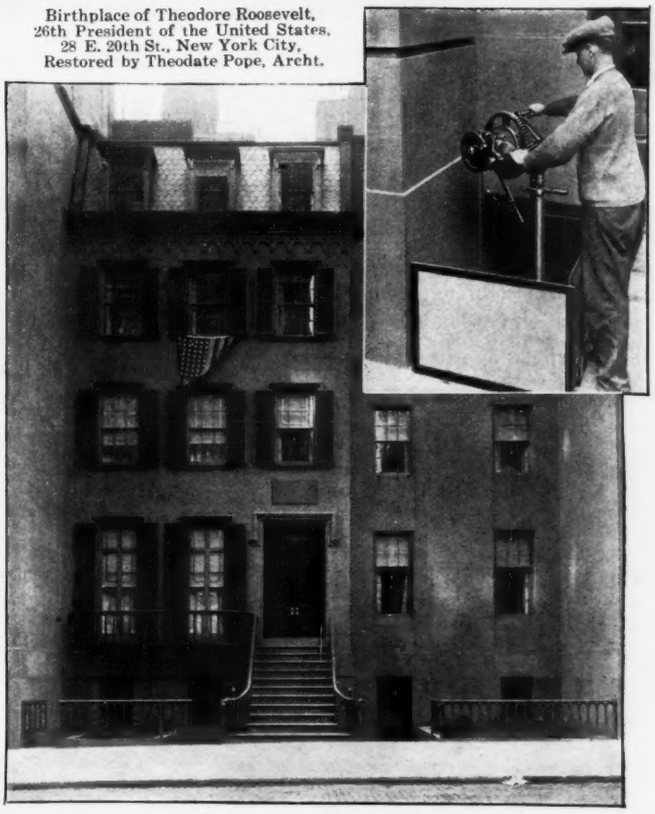
MONARCH METAL PRODUCTS CO.
4995 Penrose St. St. Louis, Mo.

MONARCH METAL WEATHER STRIPS

Standard Control of Air Infiltration

Also manufacturers of Monarch Casement Hardware

Birthplace of Theodore Roosevelt,
26th President of the United States,
28 E. 20th St., New York City,
Restored by Theodate Pope, Archt.



the G&G
REG. U.S. PAT. OFF.
Telescopic Hoist
with Automatic Gear Shifting Brake
Device and Silencer

At the Birthplace of Theodore Roosevelt

THE Roosevelt Memorial Association spared no effort or expense in faithfully restoring this old building to its original state. Fortunately it has been possible to collect much of the original furniture and fittings, and many of the articles personally used by Theodore Roosevelt have been placed on display.

The problem of ash removal, however, was met by providing the most efficient method available today. A G&G Model A Telescopic Hoist with complete equipment was installed. The G&G Sidewalk Doors were especially fitted with blue stone to conform with the exterior appearance of the building.

GILLIS & GEOGHEGAN
548 West Broadway New York City
Photograph copyrighted by Gillis & Geoghegan

Samson Spot Sash Cord

Trade Mark Reg. U. S. Pat. Off.

Made of extra quality stock, carefully inspected, and guaranteed free from all imperfections of braid or finish. Can be distinguished at a glance by our trade mark, the Colored Spots, used only with this quality.

By using Samson Spot Cord instead of roughly braided cord, made of inferior and adulterated material, you can be sure of uninterrupted service for twenty-five years or more.

The difference in cost between Spot Cord and the cheapest kind is small in comparison with the expense of replacing one broken cord.

Send for sample card

SAMSON CORDAGE WORKS
BOSTON, MASS.

STRUCTURAL SLATE *for* SCHOOL BUILDINGS

City School, Norton, Kansas
C. D. Turnbull, Architect

THE Structural Slate Co., in co-operation with the Structural Service Bureau, has issued a publication bearing the above title. This describes and illustrates installations of natural slate, particularly adaptable for use in Schools and Educational Institutions.

Among the subjects included are Stairways, Toilet Enclosures, Shower Stalls, Urinal Stalls, Sinks, Tubs and Lavatory Tops, Furniture and Equipment, Bases, Wainscots, Floors and Blackboards.

Copy will be sent on request.

THE STRUCTURAL SLATE CO.
130 Robinson Avenue
PEN ARGYL, PENNSYLVANIA

RAIL STEEL
REAL STRENGTH

Quality and Metal Fatigue

Send for This Valuable Book—FREE

The first and only authoritative and comprehensive treatise on concrete Reinforcing Bars and containing most important information on the manufacture, qualities, and use of Rail Steel Bars. The cost of this booklet makes it necessary for us to control its distribution and we ask that your request for copy be sent us on the letterhead of an architectural or engineering firm. Address the nearest office, Dept. E.

The quality of steel is determined by the care used in its manufacture. Railroad rails, being subjected to enormous stress, both static and dynamic, are manufactured from steel made under the most careful methods. The tapping of the steel from the furnaces, the pouring of the ingot, the temperatures in the soaking pits, the rolling of the ingot to the bloom, the crop to eliminate pipe and segregation, and the rolling of the rail, are all carefully followed by railway as well as mill inspectors. Particular attention is paid to the elimination of all piped and segregated material, so very important to the production of a pure and uniform product.

It is from rails manufactured in this way that rail steel Reinforcing Bars are rolled. The bars retain all of the quality, all of the purity, and all of the strength of the original rail. Rail Steel Bars are made from a steel originally manufactured for a definite purpose, and this purpose demands the best steel possible to produce.

The impression sometimes gained is that the strain set up in the rails, due to their strenuous service on the railroads, is somehow or other carried into the bars produced from them and that the structure of the bar is thus impaired. This is not true. The heating of the rail for rolling removes every strain and the steel in the rail, as it enters the roll of the bar mill, is in exactly the same condition as it was prior to its years of service.

RAIL STEEL BAR rolled from railroad rails have provided a concrete reinforcement of quality—quality obtained through care in manufacture—a degree of quality possessed by no other reinforcement steel.

Specify your reinforcing steel to meet A.S.T.M. specification A-16-14, or equal.

Steel ingot which has been cut in half, showing the "pipe" in the center and the porous segregated portion at the top. In the manufacture of rail steel the ingot is carefully cropped to remove all pipe and segregation, thus insuring a steel of the highest quality.

RAIL STEEL PRODUCTS ASSOCIATION

(REINFORCING BAR DIVISION)

BUFFALO STEEL CO., Tonawanda, N. Y.
BURLINGTON STEEL CO., Hamilton, Can.
CALUMET STEEL CO., Chicago, Ill.
FRANKLIN STEEL WORKS, Franklin, Pa.
LACLEDE STEEL CO., St. Louis, Mo.
THE POLLAK STEEL CO., Cincinnati, Ohio

RAIL STEEL FOR CONCRETE REINFORCING

This design is the identification mark for *genuine Ripolin Enamel.* All Europe knows this famous trade mark. The secret process of making Ripolin was discovered in Holland thirty years ago. Since that time Ripolin has been used throughout the civilized world.

RIPOLIN

THE ORIGINAL HOLLAND ENAMEL PAINT

See our page in Sweet's Catalogue

SOSS

Invisible Hinges

Flush Doors
Clean Lines
No Projections

A size and style to meet every requirement

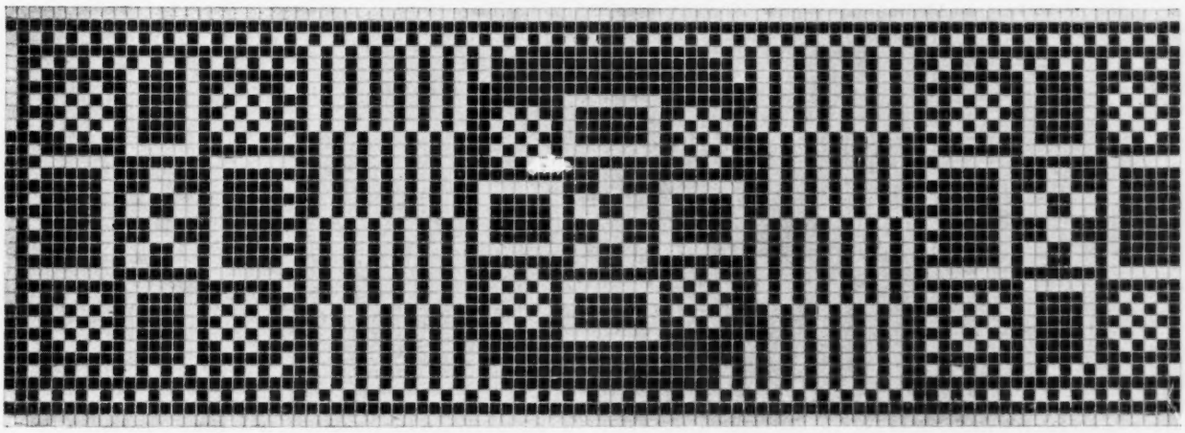
Write for our Catalog

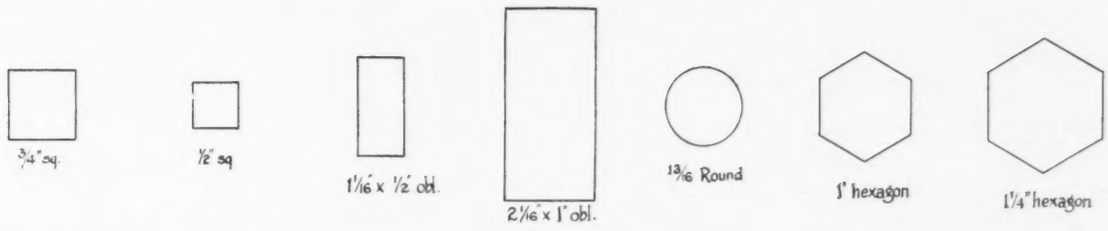
Soss Manufacturing Co., Inc.
594 Grand Ave.
Brooklyn, N. Y.

DRAFTING ROOM DETAILS FOR TILEWORK

ASSOCIATED TILE MANUFACTURERS

CERAMIC MOSAIC





CERAMIC MOSAIC is the collective term for unglazed dust-pressed tiles, ¼-inch thick and less than 2¼ square inches in area.

SIZES AND SHAPES

¾x¾ inch . . . Square	½x1 1-16 inch . Oblong
1 inch . . . . Hexagon	1¼ inch . . . Hexagon
13-16 inch . . . Round	1x2 1-16 inch . Oblong

COLORS

White, Cream, Silver Gray, Buff, Pink, Salmon, Red, Light and Dark Blue, Light and Dark Green, Light and Dark Gray, Chocolate, Black and "Granites" of these colors.

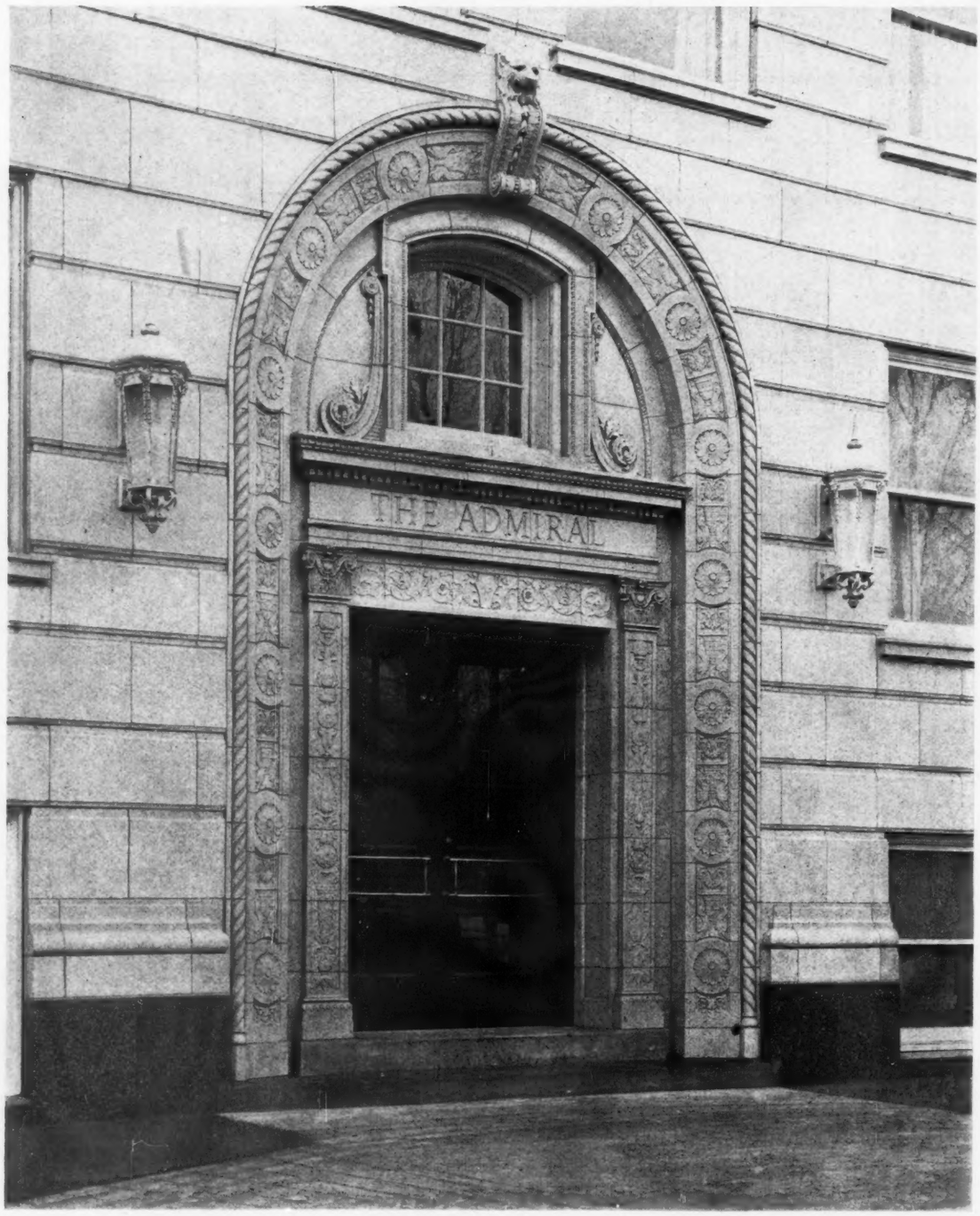
CERAMIC MOSAIC is marketed in sheet units, i. e., the individual tile or tesserae are properly spaced and mounted on sheets of paper, which enables the tilesetter to apply several hundred tiles at one time. The mounting paper is removed after the tiles have been set.

Our publication K-500 contains color chart, standardized patterns, borders, trimmers, dimensions, areas, number of tesserae per square foot, and other data.

Design paper, in mounting sheet units, with joint lines printed in special ink which does not take water color and makes rapid working possible, will be furnished to architects upon request.

ASSOCIATED TILE MANUFACTURERS

BEAVER FALLS — PENNSYLVANIA



Entrance doorway, The Admiral Hotel, Chicago, Illinois: John A. Nyden, Architect.

"NORTHWESTERN" mottled glazed terra cotta of a grey-green tint, with base course of pink granite finish, was used for the trim of this entire building.

NORTHWESTERN is a short form of specification for architectural Terra Cotta of superior quality.

THE NORTHWESTERN TERRA COTTA COMPANY

CHICAGO

HITCHINGS GREENHOUSES

WHEN IT COMES
TO GREENHOUSES
COME TO
HITCHINGS AND COMPANY

Hitchings and Company

Home Offices and Factory, Elizabeth, N. J.

New York
101 Park Ave.

Philadelphia
Empire Building
13th and Walnut Sts.

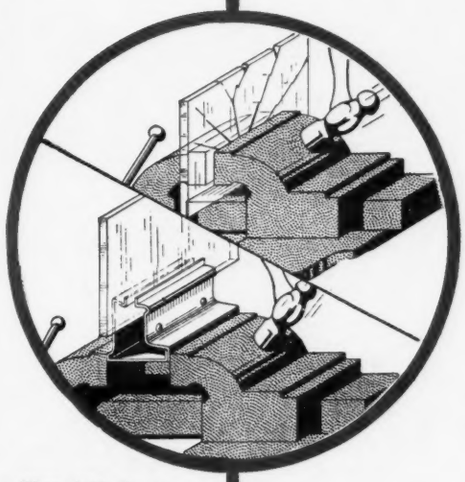
Boston—9
294 Washington St.

Rochester
Union Trust Bldg.

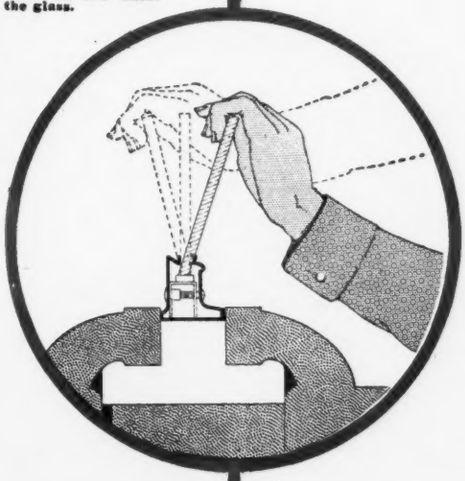
"POTTERY"
TILE STEPS and
RUBBLE RANDOM
TILE WALKS---
in natural Fireflashed Shades
An ideally beautiful and permanent treatment for Entrances and Gardens - - formal or informal
Thoroughly vitrified and practically wear-proof.
Further particulars and the name of nearest dealer or agent handling this material gladly furnished upon request
B. Mifflin Hood Brick Company
Atlanta Ga.

Kawneer

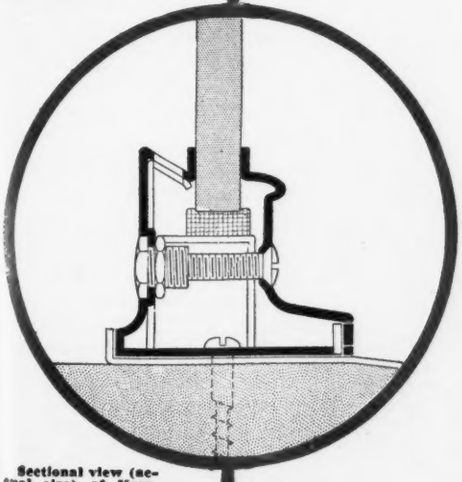
SOLID COPPER
STORE FRONTS



Glass held in a rigid vise is easily shattered by a slight blow. But when held in the resilient, spring grip of Kawneer Store Front Construction, vibrations do not affect the glass.



Because of the resilient grip, glass set in Kawneer Construction is free to rock on its own base when bowed under wind pressure.



Sectional view (actual size) of Kawneer Resilient Sash showing how rugged strength is combined with spring-like grip.

These tests show the essentials of a correct plate glass setting

Plate glass vibrates. It also bends.

Strike your knuckle against a large plate of glass and you will hear it vibrate. Watch it on a windy day and you can easily see the glass bend under wind pressure.

Plate glass is brittle. When it is held in a tight, rigid grip, vibrations from street cars, busses, ect. and bending under wind pressure frequently cause breakage.

Kawneer Resilient Store Front Construction holds glass between two spring faces so that the vibration waves pass out thru the edges of the glass in a natural way. This spring-like resiliency also permits the glass to rock on its base when bent under wind pressure, eliminating the danger of breakage.

This feature of resiliency has been proven successful in more than 260,000 Kawneer Store Fronts. You will find them on most business streets.

More than 60 Branch Offices and sales connections are prepared to give prompt service on architects requirements. Catalog and standard details sent promptly upon request.

THE
Kawneer
COMPANY
NILES MICHIGAN

With and For our Advertisers

Mr. Rafael Carmoega, Department of the Interior, San Juan, P. R., writes under date of November 13th as follows: "I have been receiving catalogs and literature from manufacturers in the States, which they are sending at your suggestion. These will come in handy." Mr. Carmoega is the architect in charge of a considerable group of public buildings for which plans are now being drawn.

In response to the invitation extended to our readers to comment on the advertising pages of PENCIL POINTS, we received the following letter from Mr. G. V. P. Lansing. "As an admiring reader of PENCIL POINTS I consider the advertisement on Page 93, November number (American Face Brick Ass'n), the best appearing because of its simple but absolutely realistic character in delineation. *It does just what an advertisement should do—tells the truth.*"

Every reader of PENCIL POINTS is invited to discuss the merits of the various advertisements appearing in our advertising section. Which is the best advertisement in this issue?

The Casement Hardware Co. announces the opening of a new office on the Pacific Coast, in charge of Mr. W. R. Voorhees, Voorhees & Co., 76 Montgomery St., San Francisco, Calif.

The Cutler Mail Chute Co. announces that they have established an office at 345 Madison Avenue, New York City, which will be in charge of Mr. Samuel C. Wooster, Vice-President. The Service Station at 161 Washington Street, New York City, in charge of Mr. G. C. Emrich, will be maintained as at present.

We are just as human as anybody else and like to get letters saying nice things about our paper. Here are quotations from two which have recently come to us. "I also have been told by many people that you had made good and rejoice in it nearly as much as you do because the publication is one of those very rare ones which actually do fill a want." (Signed) March G. Bennett, Samuel Cabot, Inc., 141 Milk St., Boston, Mass.

"You will be glad to know that inquiries referring to PENCIL POINTS constitute a very substantial percentage of the total, which is spread among four architectural publications, and the number of daily inquiries is steadily increasing. It must be a great satisfaction to you to have developed a publication which in so short a time has attained the prestige that PENCIL POINTS unquestionably so well merits." (Signed) H. H. Sherman, Secretary, National Building Granite Quarries Assn., 31 State St., Boston, Mass.

Alteneder & Sons, Theo. 82
American Abrasive Metals Co.. 84
American Face Brick Assn. ... 85
American Inst. Architects 72
American Lead Pencil Co. 81
Angel, H. Reeve & Co. 83
Associated Tile Manufacturers 13
Atlantic Terra Cotta Company.. 1

Bishopric Manufacturing Co. .. 19
Bull Dog Floor Clip Co. 69

Cabot, Samuel, Inc. 88
Canson & Montgolfier 81
Casement Hardware Co., The .. 73
Cassidy Company 88
Chicago Pump Co. 76
Copper & Brass Research Assn. 95
Crane Company 5
Creo-Dipt Company, Inc. 86
Cutler Mail Chute Company ... 86

DeBellegarde, F., Inc. 78
Del Turco, L. & Bros., Inc. 69
Dietzgen Co., Eugene 83
Dixon Crucible Co., Joseph 67

Elevator Supplies Company, Inc. 78
Emack Co., The John D. 10
Empire Steel Partition Co., Inc. 74
Enameled Brick Assn. of America, The 2

Fairfacts Company, Inc., The .. 92
Fulton Company, The 71

General Electric Co. 9
Georgia Marble Co. 6
Gillis & Geoghegan, Inc..... 11
Glidden Company, The 12
Guth Company, Edwin F. 20

Higgin Manufacturing Co. 3
Higgins & Co., Chas. M. 82
Hitchings & Co. 15
Hood Brick Company, B. Mifflin 16
Horn Company, A. C. 84

Additional new advertisers to start with the new year are, Dahlstrom Metallic Door Co., Murphy Door Bed Co., Maple Flooring Association, L. Del Turco & Bros., Marbleloid Co., Abram Cox Stove Company, American Radiator Co., and Philip Carey Co. We are glad indeed to add this list of representative firms to those who are already using our service.

Indiana Limestone Quarrymen's Assn. .....2nd cover

Jansen, J. H. 83
Johnson Service Co. .....4th cover

Kawneer Company 17
Keuffel & Esser Co. 82
Kewanee Boiler Co. 73
Kinnear Mfg. Co. 84
Koh-I-Noor Pencil Co. 80

Lawton-Stephens Co., Inc. 62
Leonard-Rooke Co. 86
Lithoprint Co. of New York, Inc. 81
Loomis-Manning Filter Distributing Co. 72
Louisville Cement Co. 7

Milwaukee Corrugating Co..... 96
Monarch Metal Products Co. .. 10
Mueller Mosaic Co. 88

National Building Granite Quarries Assn. 93
National Slate Co. 86
National Terra Cotta Society .. 94
New Jersey Terra Cotta Co. ... 77
Northwestern Terra Cotta Co.. 14

Pease Company, The C. F. 83
Peele Company, The 4
Penguin Book Shop 72
Pole & Tube Works, Inc., The .. 74

Rail Steel Products Association 12
Rapid Blue Print Co. 80
Rixson Co., The Oscar C. 69
Rookwood Pottery Co., The 88
R. U. V. Co. 76

Samson Cordage Works 14
Schools 68
Shaw Publishing Co. 82
Smith & Egge Mfg. Co., The ... 84
Smith Hardware Co., Frank F. 74
Sonneborn, L., Sons, Inc..3rd cover
Soss Manufacturing Co., Inc. .. 12
South Amboy Terra Cotta Co. .. 87
Structural Slate Company 14

Thatcher Furnace Co. 74
Trenton Potteries Company, The 8
Tuttle & Bailey Mfg. Co. 79

U. S. Gypsum Co. 91
Universal Electric Stage Lighting Co., Inc. 73

Vermont Marble Company 75
Vonnegut Hardware Co. 90

Wagner Manufacturing Co. 71
Weber Company, F. 80
Wilson Corp., The J. G. 89

BISHOPRIC STUCCO OVER BISHOPRIC BASE

This Modern Construction Saves Home Builders 30 Percent

BISHOPRIC STUCCO in its scientific production, uniformity, great density and tensile strength—is waterproof—fireproof—and provides against contraction or expansion, thereby preventing cracking, checking or chipping of the surface. All the elements of wear and tear have been anticipated in the manufacture of "BISHOPRIC." It is specially treated to eliminate depreciation.

BISHOPRIC STUCCO is factory mixed and is shipped in original and exclusive air tight, metal drums containing 100 lbs. each, keeping the product within, in perfect condition until the day it is opened and used, thereby providing against damage due to rain, sleet, snow or any loss, deterioration or delay by reason of exposure, which materials are invariably subject to, after being delivered on the job, due to varying changes of weather conditions.

BISHOPRIC BASE with its interlocking dovetailed key is an exclusive, patented base or background for stucco. It is a specially designed product, built up of selected and seasoned wood strips, set in a heavy layer of asphalt, on a pure, wood fibre base. As an insulating, strengthening, sound-deadening moisture-proof and fire-resistant base, it insures a building that is absolutely dry, vermin-proof and healthy.

BISHOPRIC BASE has passed with highest honors, rigid strength tests imposed by foremost engineering concerns; by Sheffield Scientific School of Yale University; by the professor of engineering of Cincinnati University; and by the building commissioners of America's leading cities. It has met all tests so successfully that architects and contractors now accept BISHOPRIC as a building material conforming in every respect to the highest standards of good construction.

BISHOPRIC STUCCO over BISHOPRIC BASE provides a building that is warm in winter and cool in summer. The cost of BISHOPRIC is surprisingly low. Its low initial cost, plus its superior strength and service, makes it popular with the home builder of either mansion, cottage or bungalow.

FOR DETAILS & SPECIFICATIONS SEE SEVENTEENTH EDITION SWEETS CATALOG PAGES 388 390 INCLUSIVE

The American Specification Manual, Sweet's, and the Specification Record of the American Specification Institute are first-hand sources of information on Bishopric.

Write for "Specifications & Working Details"

Bishopric is Sold by Dealers Everywhere

The BISHOPRIC MANUFACTURING Co
110 ESTE AVE. CINCINNATI, OHIO
NEW YORK CITY NEW YORK · LOS ANGELES CALIFORNIA · OTTAWA CANADA

The EDWIN F. GUTH COMPANY

DESIGNERS - ENGINEERS - MANUFACTURERS

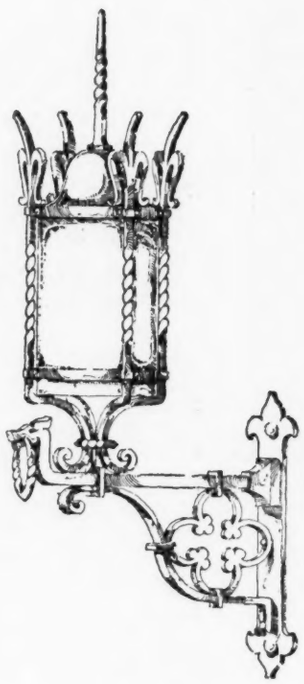
Lighting Equipment

IN designing "period" lighting equipment it is frequently desirable to follow the "spirit" of the period rather than the mechanical formation of examples which would not be practicable with present-day methods or needs.

All such considerations are given careful attention in our designing. "Ready made" equipment practically never is suitable in proportion and detail for work of an exacting character and new designs in perfect harmony with the feeling or atmosphere created by the architect are invariably made.

"Hand made" execution of period designs by skilled artisans of long experience insures a satisfactory creation.

Our facilities and experience in design and manufacture are at your disposal.



S 69504
Bracketed Lantern

A sturdy, hand forged iron lantern — fashioned in the bold, sketchy style of the early Italian craftsmen and with strict observance of those principles of design which define the period.

The EDWIN F. GUTH COMPANY

ST. LOUIS, U. S. A.

Formerly the St. Louis Brass Mfg. Co., and the Brascolite Company

BRANCH OFFICES (*Sales and Service*)

Atlanta, Boston, Chicago, Cincinnati, Detroit, Los Angeles
Minneapolis, New Orleans, New York, Omaha, Philadelphia, Seattle

A Treasure Chest of Color

Dixon's "Best" Colored Pencil Set No. 110. 24 colors. Considered by many artists to be the best colored pencils made. Smooth—true to grade—responsive. Will stand unusual pressure. The colors will excite your admiration.

JOSEPH DIXON CRUCIBLE COMPANY
Pencil Dept. 167-J, Jersey City, N. J.
Canadian Distributors: A. R. MacDougall & Company, Ltd., Toronto

SAMPLE OFFER We shall be glad to send you full-length free samples of Dixon's "Best" COLORED PENCILS. In writing please state the two or three colors you prefer.

SCHOOLS

SCHOOL OF THE FINE ARTS, YALE UNIVERSITY
Department of Architecture

1. A four-year general course in Architecture leading to the degree of Bachelor of Fine Arts [B.F.A.]. Students may specialize in the above course [a] in design; [b] in Construction.
2. Special students properly qualified are admitted to the courses in the Department of Architecture. Students of the Department of Architecture may avail themselves of general allied courses in Painting and Modeling. For special catalogue of the Department of Architecture address Secretary of the School of the Fine Arts, Yale University, New Haven, Conn.

OHIO MECHANICS INSTITUTE

Intensive Two-Year Course in Architecture. Four-Year Technical High School Course in Architecture. Also Special Courses for Draftsmen. For further information, address the Registrar, Central Parkway and Walnut St., Cincinnati, O.

BEAUX-ARTS INSTITUTE OF DESIGN
126 East 75th Street, New York City
Free Instruction in
ARCHITECTURAL DESIGN INTERIOR DECORATION
SCULPTURE: LIFE. COMPOSITION. ORNAMENT
MURAL PAINTING COMPOSITION
Instruction founded on the principles of the Ecole des Beaux-Arts of Paris. Circular free on application.

PRIVATE INSTRUCTION
personally and by mail, in elem. and advan. design and rendering,
INDICATION (a Three-In-One course) a specialty.
Prof D. VARON, S. A. D. G.
author "Indication in architectural design" and of "Architectural composition"
Tel: Vanderbilt 4277 213 Lexington Av. New York
CONSULTATIONS *SKETCHES*

INDIVIDUAL EVENING INSTRUCTION
For Tracers, Detailers, Draftsmen and Specification Writers.
Individual Instruction Only.
All Instructors are Practical Architects and Engineers.
Reasonable Tuition Rates.
Morning - Afternoon - Evening Sessions
Y. M. C. A. School of Building Const. and Structural Design
153 East 86th Street, New York City
F. H. Baker, Director
Write for Our Booklet

DAY AND EVENING COURSES
Architectural Drafting, Structural Drafting, Estimating, Building Construction
Preparation for Industry instead of College
Thirty other Courses
FRANKLIN UNION
Technical Institute
41 Berkeley St. Boston 18, Mass.
Write for Circular.

Pencil Points Books

SKETCHING AND RENDERING IN PENCIL
Arthur L. Guptill
A comprehensive and thoroughly explicit treatment of the subject of pencil drawing in all its phases. 186 pages, 9 x 12, profusely illustrated. Half Cloth.
Price - - - - - - $5.00
The Pencil Points Press, Inc., 19 East 24th St., New York

GOOD PRACTICE IN CONSTRUCTION
Philip G. Knobloch
More than 200 subjects are presented in 52 full plate pages of Building Construction Details. The drawings are made on a scale large enough to show clearly all of the detail and include explanatory notes. 52 plate pages, 9 x 12, Half Cloth.
Price - - - - - - $4.00
The Pencil Points Press, Inc., 19 East 24th St., New York

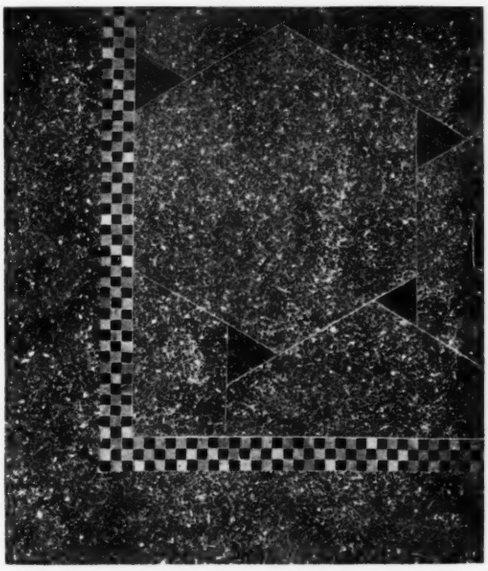
ARCHITECTURE TOSCANE
A. Grandjean de Montigny and A. Famin
The first volume in the "Library of Architectural Documents." The plates are beautifully drawn and engraved and are reproduced by a photographic process with the utmost care to insure faithfulness to the originals. 109 plate pages printed in two colors, 9 x 12, Half Cloth.
Price - - - - - - $6.00
The Pencil Points Press, Inc., 19 East 24th St., New York

FRAGMENTS D'ARCHITECTURE ANTIQUE
Hector D'Espouy
The second volume in the "Library of Architectural Documents." Contains 100 carefully selected plates from the two original volumes. This work is regarded as one of the most useful sources of inspiration for the architectural drafting room. 100 plate pages printed in two colors, 9 x 12, Half Cloth.
Price - - - - - - $6.00
The Pencil Points Press, Inc., 19 East 24th St., New York

566 MISCELLANEOUS PLATE PAGES SELECTED FROM
THE ARCHITECTURAL REVIEW, containing photographic views (exterior and interior), measured drawings, working drawings (plans, elevations, details) covering a wide variety of subjects—Public and Semi-public Buildings, Banks, Schools, Churches, American Residences (city and country), English Houses, etc.
Price - - - - - - $11.32
The Pencil Points Press, Inc., 19 East 24th St., New York

BINDERS FOR PENCIL POINTS
A good, strong, cloth, lettered in gold, spring back binder to hold twelve or more copies of Pencil Points. These binders are sold at cost as a service to our readers.
Price - - - - - - $1.50
The Pencil Points Press, Inc., 19 East 24th St., New York

DESIGNS FOR SIXTY HOUSES
The third reprint of the 1916 and 1917 White Pine Competitions, containing 40 designs for a suburban house and 20 designs for a suburban house and garage. 96 pages of elevations, plans and detail drawings in pen and ink printed on heavy coated paper from the original plates 10½ x 13 inches. Paper cover.
Price - - - - - - $1.00
The Pencil Points Press, Inc., 19 East 24th St., New York



Terrazzo Floor in the Chinese Room, Hotel Statler, Buffalo.

Geo. B. Post & Sons Architects

-- NON -- CRACKING --

- TERRAZZO FLOOR -

We are the originators and Patentees of the improved method of laying Terrazzo floor with brass dividers -

L. DEL TURCO & BROS., Inc.

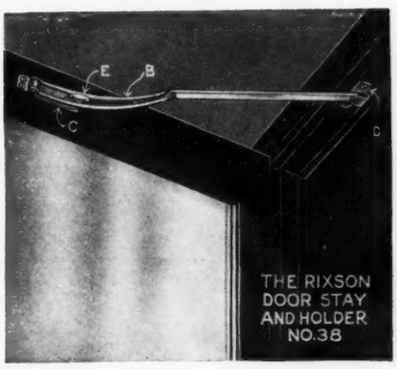
MOSAIC and TERRAZZO WORK

HARRISON N. J.

Complete data in Sweet's Catal. 18th Ed. Pages 438-439.

The RIXSON

DOOR STAY AND HOLDER



The two curved arms "B" are of spring steel and furnish ample spring cushion. To hold the door open turn thumb piece "E."

In the new Union Station, Richmond, Va. (John Russell Pope, Architect), door stays costing three times more were taken down and this one used throughout.

The N. Y. C. R. R. has also replaced some very expensive stays with this one.

Entrance doors to Loew's Theatres are now being equipped with this stay. At the Metropolitan Theatre, 392 Fulton St., Brooklyn, stays costing $15.00 each were taken down and this one used.

Several schools and restaurants have also been equipped with this stay.

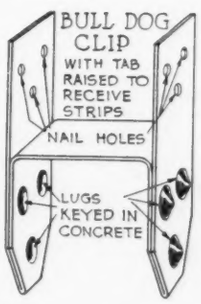
THE OSCAR C. RIXSON CO.

Manufacturers of

IMPROVED MECHANISMS IN BUILDERS' HARDWARE

Complete Catalogue containing fifty-eight pages sent free to readers of "Pencil Points"

4442 Carroll Avenue, Chicago, Ill. **1210 Architects Building, New York, N. Y.**



Bull Dog Clips

The Clips that have Simplified the laying of wood floors over Concrete

Now Made In

2" - 3" - 4"
Sizes

Try them on your next job and you'll never lay wood floors the old fashioned way again.

For free sample and descriptive booklet please write or phone your nearest distributor—

WINTERSET, IOWA
The Bull Dog Floor Clip Co.

NEW YORK
The Fireproof Products Co., 536 East 133rd St.

PHILADELPHIA
D. Robertson Fiske, 801 Harrison Bldg.

BALTIMORE
Consolidated Supply Co., Knickerbocker Bldg.

SYRACUSE, N. Y.
Paragon Plaster Co., 300 West Water St.

LAWRENCE, MASS.
Edwin M. Finn, 85 Greenfield St.

The Bull Dog Floor Clip Co.
Winterset, Iowa

Put the BULL-DOG on *your* Pay-roll

A Free Employment Service for Readers of Pencil Points

Chief Draftsman Wanted for well known middle west firm having average yearly work of three to five million in bank, office and school buildings. We desire a high class man, preferably a college graduate in architecture and extended experience in practical construction, with whom unusual quality of work is his main incentive. Please give full history and references with answer. Box 236, Pencil Points.

A Well Known Southern Architect offers an opportunity to a young man who desires to work in an architect's office, preparing himself for a short course in architecture, or to stay in office and learn under working conditions. Box R. H. H., Pencil Points.

General Architectural Draftsmen Wanted: Several senior draftsmen capable of preparing large scale working drawings, detail and full sizes, from preliminary sketch studies. State age, salary desired, experience and general qualifications with a few specimens of practical work accompanying first letter. Richter & Eiler, architects, Reading, Pa.

A Corporation with headquarters at Wilkes-Barre, Pa., want an architectural draftsman having at least 10 years' experience in architect's office, and capable of superintending construction of buildings. Must be able to measure up buildings and make neat and thorough drawings. Only practical, well trained men need apply. Good opportunity for right man. State salary and give references. Box 230, Pencil Points.

Junior Draftsman seeks position with architect. Two years' experience in architect's office, two years in builder's office. Columbia student evenings doing Beaux-Arts work. Salary $27. Box 231, Pencil Points.

Senior Draftsman desires position of responsibility and opportunity. University graduate with seven years' practical experience. In charge of over four million dollars' worth of work in past three years. Experienced in sketches, working drawings, specification details, superintendence and office management. Special study of house work and apartment house and commercial building planning and financing. Four years in army finishing with rank of Major. Married; 32 years old. Will go anywhere. Box 232, Pencil Points.

General All Around Man in architect's office seeks position. Twenty-five years' architectural experience—all kinds of work. Box 233, Pencil Points.

Graduate Architect who is first class draftsman desires position in Florida. Box 234, Pencil Points.

Designer, age 31, desires permanent connection with small firm doing first class work. University graduate; seven years' experience, the past eighteen months in charge of architectural work on two million dollar monumental building. Wife is excellent delineator in water color, pen and ink and pencil, with seven years' experience in interior furnishing. Excellent references. Box 235, Pencil Points.

Position Wanted: Architect's superintendent or assistant. Age 36. Married. Protestant. Fifteen years' experience in architectural and building business as draftsman and estimator, specification writer and superintendent, especially high class residential, church and school work. Capable of taking charge of an office, acting as chief draftsman. Excellent references. Salary commensurate with qualifications. Box 237, Pencil Points.

Position Wanted: Graduate of Cooper Union. Three years' experience, architectural drafting, metal furniture designing and reflector designing. Box 238, Pencil Points.

Position Wanted: Architectural draftsman. Cooper Union and Columbia University schooling. Six years' experience on apartment houses, city residences, country houses and factories. Box 239, Pencil Points.

Draftsman, senior, experienced plan elevation, detail, design, preliminary sketches, etc., desires position in New York City. Best references. Beaux-Arts training. Box 240, Pencil Points.

Position Wanted: All around draftsman, college education. Willing. Seeks work in architect's office. Box 242, Pencil Points.

Position Wanted in architect's office. Tracing and laying out work. Box 243, Pencil Points.

Draftsman with eight years' experience in large offices desires to change for smaller office in New York City. Cooper Union graduate. One year Beaux-Arts. Twenty-six years old. Box 241, Pencil Points.

Architect with 25 years' experience in design, supervision and construction of domestic work, as well as larger types of buildings, having had several years' experience in connection with all phases of realty work, and having had charge of engineering work for large Boston development firm, is anxious to make connection with building firm or realty corporation where ability as an executive might be of value in building up business. Box 244, Pencil Points.

Civil Engineer, M.I.T. graduate—22 years old, with training in finance and business management—desires connection with construction company contractor, engineer or manufacturer of building materials and equipment where there is opportunity to exercise initiative and where hard work is appreciated. Interested in the economics of construction, in work such as cost studies and estimates, and should like to hear from small contractor who needs man for making up estimates and who would consider taking partner after a time. Box 245, Pencil Points.

Position Wanted in Orient. Twelve years' experience, all kinds of architectural work. Three years in Shanghai superintending large group buildings. American 33 years old. H. G. Chifner, 979 Suttes Street, San Francisco, Cal.

Renderings, perspectives, bird's-eye views, landscapes of different media by artist with wide architectural experience. T. T. dePostels Studio, 511 West 139th Street, New York City. Phone Audubon 1170.

Position Wanted with architect or builder by man who has had practical experience. Understands construction but has never been employed as draftsman. Francis F. Pennaman, 2038 Fifty-ninth Street, Brooklyn, N. Y.

Junior Draftsman wishes position. Two years' experience power house work and sub-station duties. General detailing of architectural equipment for power house and sub-station. Salary $140 per month. Box 246, Pencil Points.

Junior Draftsman wishes position. Six years' general architectural work. Alfred Reinhardt, 40 Rosecrans Street, North Woodside, L. I.

Position Wanted. Estimator, draftsman. Eight months' experience. Twenty-one years old. (Terra cotta.) Salary $30 per week. Prefer to estimate for building material company. Box 248, Pencil Points.

General Draftsman, six years' experience, wishes position. Box 249, Pencil Points.

Architectural Student—secretary—wishes position. Cooper Union. Did tracings and helped generally in drafting room beside secretarial work. Box 250, Pencil Points.

Designer and Draftsman, ten years' experience, desires work after one p. m. and evenings. Good at sketches, developing working drawings and details. All types of work. Renderings and cardboard models. Conrad A. Albrizio, 401 Third Avenue, New York City.

Junior Draftsman wishes position with architect in New York or in marble or stone shop. Student of Cooper Union. Can work from sketches, trace, etc. Ferdinand Rolla, 110 West Houston Street, New York City.

Position Wanted: Draftsman, graduate of University of Vienna. Three years' experience in Vienna, nine months in United States. Designer, draftsman, can make working drawings, ornamental structural details. Ludwig Mestler, c/o Richard Muenz, 2817 Sedgwick Avenue, New York City.

Wanted: Position as junior architectural draftsman. One and a half year's experience. Cooper Union and Columbia University extension student. Box 251, Pencil Points.

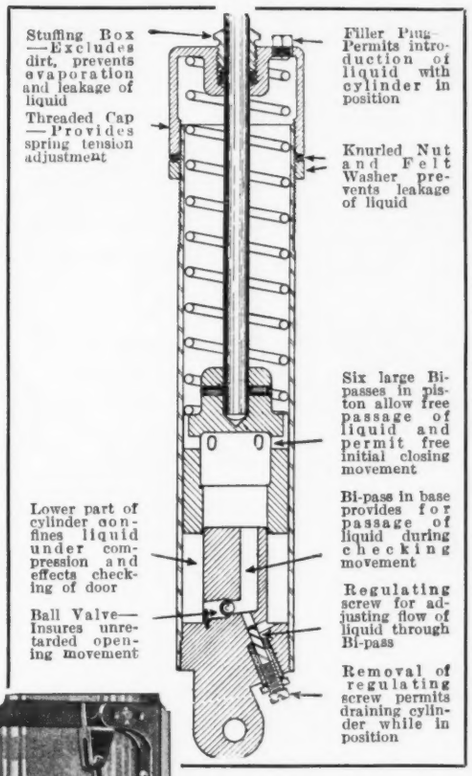
Position Wanted by practical draftsman and superintendent. Seven years' experience. Box 252, Pencil Points.

Position Wanted in or near New York City by young draftsman and designer. 2½ years' experience in good office. Graduate of Pratt Institute. Residential work preferred. Box 259 Pencil Points.

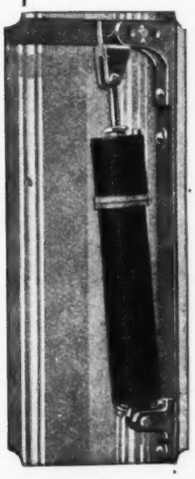
(*For Additional Items see page* 64)

WAGNER

ELEVATOR DOOR CLOSER AND CHECK


Stuffing Box —Excludes dirt, prevents evaporation and leakage of liquid
Threaded Cap —Provides spring tension adjustment
Filler Plug—Permits introduction of liquid with cylinder in position
Knurled Nut and Felt Washer prevents leakage of liquid
Six large By-passes in piston allow free passage of liquid and permit free initial closing movement
Lower part of cylinder confines liquid under compression and effects checking of door
By-pass in base provides for passage of liquid during checking movement
Ball Valve—Insures unretarded opening movement
Regulating screw for adjusting flow of liquid through By-pass
Removal of regulating screw permits draining cylinder while in position

Cut shows relative position of parts at start of checking movement



Perfect assurance of unvarying dependable performance has gained for this Wagner product a preference that is indeed significant.

Operating automatically, it closes and locks with smooth, noiseless efficiency. Simple and sturdy in construction, it offers a service remarkably free from trouble.

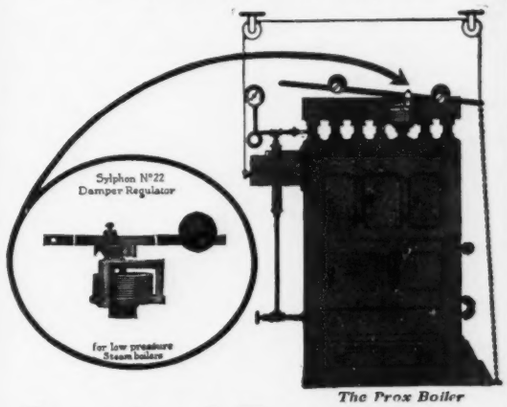
And it can be cleaned easily and quickly without disconnecting.

Insist on it always for paramount service.

WAGNER Manufacturing Co.
CEDAR FALLS, IOWA

WAGNER Silent Chain Drive Center Parting Hanger

As installed in hundreds of thousands of heating systems in the past 15 years.



The Prox Boiler

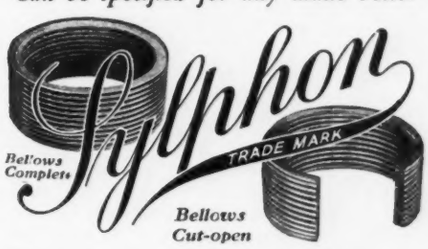
Standard Equipment on all these steam boilers

Abco	Coil	Oil City
Ames	Gallaher	Pebco
Bernhard	Kewanee	Pierce
Birchfield	Monroe	Prox
Butler	National	Richardson
Coatesville	Newport	Simplex

These boiler makers standardize on No. 22 Sylphon Damper Regulator because it contains, as its diaphragm, the marvelous Sylphon Bellows.

Drawn from a flat sheet of double tested metal—without seams, without solder—it is the perfect diaphragm—one that will actually last as long as the boiler, and one that will, year in and year out, open and close the draft smoothly and positively. No other expansion member can be as sensitive, as positive, and give such long-life regulation.

Can be specified for any make boiler



Damper Regulators

Specify 45-A for hot water Boilers and Heaters

It, too, contains the marvelous Sylphon Bellows as its expansion member.

Do not accept imitations for Sylphon Damper Regulators. We are the originators, patentees and sole manufacturers of the Sylphon Bellows.

Send for Bulletin NDR

THE FULTON COMPANY

KNOXVILLE, TENNESSEE
New York - Chicago - Detroit - Philadelphia
Representatives in all principal cities

PENCIL DRAWING

BY WM. P. SPRATLING

INSTRUCTOR IN ARCHITECTURE, TULANE UNIVERSITY OF LOUISIANA

This sketch is from "Pencil Drawing"

A new book, short and concise, for the student and draftsman, outlining methods of rendering and including "Composition" and "Indication and The Sketch". Illustrated with ten drawings by the author.

Price Postpaid One Dollar
On Sale at Book Stores or Order from
THE PENGUIN BOOK SHOP
407 ROYAL STREET, NEW ORLEANS

Trade Mark

Established 1880

"OWNERS EXPERIENCE A SENSE OF SECURITY"

with

"FRESHLY FILTERED RUNNING WATER"

At every faucet from a

Loomis-Manning Water Filter

WORTH—REPUTATION

Leading Architects and Engineers

Have for forty years specified Loomis-Manning Water Filters for use in their great creations and under such specifications we have installed Loomis-Manning Filters in many thousands of Homes, Hospitals, Public Buildings, Office Buildings, Hotels and Apartments, etc.

IF YOU ARE BUILDING A NEW HOME don't fail to ask your Architect to include a Loomis-Manning Filter in his specifications, for it filters all the water, it frees the water from all matters in suspension, color and iron stain, and tastes, chlorine odor and taste and delivers it to all the faucets in the home, clean sparkling and safe for any domestic purpose and it is highly palatable.

LOOMIS-MANNING FILTERS are easily installed in homes already occupied.

LOOMIS-MANNING FILTERS cure hot and cold water troubles and rusty iron waters.

Plans and estimates promptly submitted upon request.

Send for Booklet

LOOMIS-MANNING FILTER DISTRIBUTING COMPANY

1441 South Thirty-seventh Street
Philadelphia, Pa.

The Standard Contract and Other Documents of the American Institute of Architects

"Initiative, Perseverance, Courage and all other attributes of business success are secondary to the attribute of THOROUGHNESS."

JOHN HAYS HAMMOND.

Standard Documents

Agreement and General Conditions in cover	$0.20
General Conditions without Agreement	.14
Agreement without General Conditions	.05
Bond of Suretyship	.03
Form of Subcontract	.04
Letter of Acceptance of Subcontractor's Proposal	.03
Cover (heavy paper with va.uable notes) ..	.01
Complete set in cover	.30

Complete trial set prepaid for thirty cents in stamps

Other Contract Forms

Form of Agreement between Owner and Architect on the Percentage Basis	$0.05
Form of Agreement between Owner and Architect on the Fee Plus Cost System ..	.05
Circular of Information on Fee Plus Cost System (Owner-Architect)	.03
Form of Agreement between Owner and Contractor (Cost Plus Fee Basis)	.10
Circular of Information on Cost Plus Fee System (Owner-Contractor)	.06

Two New Documents

The Functions of the Architect	.03

Demonstrates to the Layman the quality and value of architectural service.

The Functions of the Institute	Free

Tells what the Institute is trying to do for the profession as a whole.

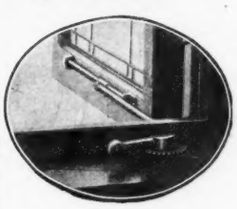
Is there any architect's office which can afford *not to investigate* the potential value to its business of some or all of these documents?

NOW IS A GOOD TIME TO KILL THE RUMOR—THAT THE ARCHITECT IS A *POOR* BUSINESS MAN.

Your dealer can supply the Standard Documents. All documents are obtainable from the Executive Secretary, the A. I. A., The Octagon House, Washington, D. C. Every order is filled on the day received, transportation prepaid.

Win-Dor

Casement Window Operators



THIS is our "BULL-DOG" type operator, which is especially known for the *telescoping handle, permanently attached to each operator.* This handle provides *manual locking* at eight points, to 90 degrees. "BULL-DOG" has been tested by *wide use* and maintains its popularity through strength, convenience and extreme simplicity.

Especially desirable for residential work, where *inside stool extends 4 inches or more inside of screen. Will fit very deep jambs in heavy masonry walls, where most operators cannot be applied.*

Write us for details or "full sizes."

The* Casement Hardware *Co.

235 PELOUZE BLDG. CHICAGO, ILL.

AT YOUR SERVICE

Theatre and especially Stage Lighting is a profession in itself requiring specialized knowledge gained only by years of actual experience. We have lighted the Stages of America and worked out special effects for 25 years. Let us assist you in the details of specifications from control panels to interior and exterior lighting.

Our illustrated 130 page Book K. P. gives some idea of the requirements for modern Theatre Lighting.

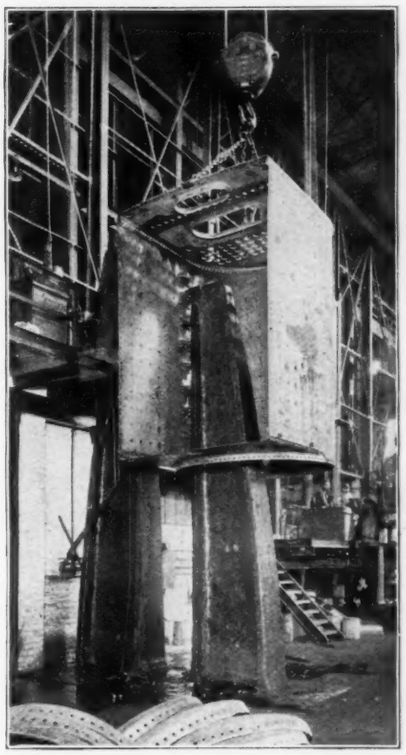
Write for a copy.

Universal Electric Stage Lighting Co.
Incorporated
321 West 50th Street, New York City

Stage Lighting Engineers—Designers and Builders of Everything Electrical for the Stage and Theatre

KEWANEE

Steel and Rivets Insure Strength



In the Kewanee Shops many "superhuman" overhead cranes pick up the biggest boilers and carry them to the riveting tower, where the rivets are driven home with tremendous force. This makes a "joint" whose strength is ***known***—a joint that can be depended upon.

And that is another reason why Kewanee Steel Boilers are the preferred boilers for fine buildings.

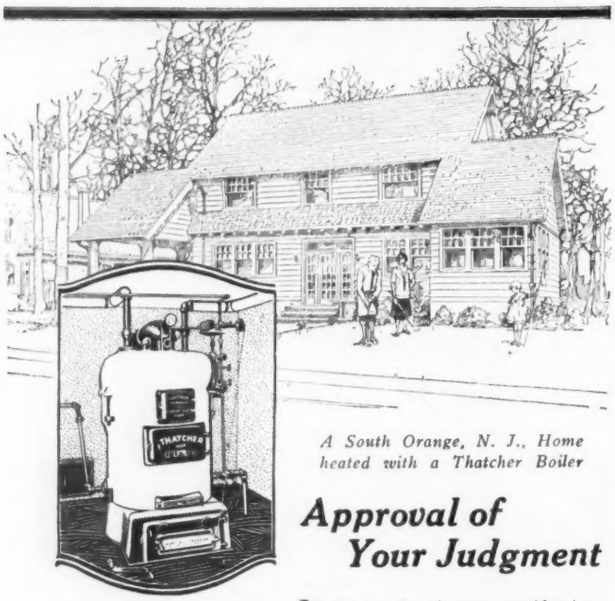
KEWANEE BOILER COMPANY
KEWANEE, ILLINOIS

Steel Heating Boilers, Radiators, Tanks, Water Heating Garbage Burners

BRANCHES:

CHICAGO	822 W. Washington Boul.	MILWAUKEE	Mer. & Mfrs. Bank Bldg.
NEW YORK	47 W. 42nd St.	PITTSBURGH	Empire Bldg.
DES MOINES	315 Hubbell Building	DENVER	514 Boston Bldg.
KANSAS CITY	2014 Wyandotte Street	DALLAS	Southwestern Life Bldg.
INDIANAPOLIS	509 Occidental Building	DETROIT	1772 Lafayette Boul.
ST. LOUIS	4200 Forest Park Boul.	TOLEDO	1121 Nicholas Building
MINNEAPOLIS	708 Builders Exchange	CLEVELAND	706 Rose Building
COLUMBUS, O.	808 1st Nat'l Bank Bldg.	ATLANTA	1521 Candler Building
SALT LAKE CITY	204 Dooly Bldg.	SAN FRANCISCO	216 Pine St.—R. 210

CANADIAN REPRESENTATIVES—The Dominion Radiator & Boiler Co., Ltd. Toronto, Ont., Montreal, Que., Winnipeg, Man., Hamilton, Ont., St. John, N. B. Calgary, Alta.



A South Orange, N. J., Home heated with a Thatcher Boiler

Approval of Your Judgment

IS the result of your specification of Thatcher Heaters which are known to represent the highest standards in heating equipment.

It is significant that those who surround themselves with *the best* in home appointments, are those who are most interested in Thatcher Heaters.

SEND FOR CATALOG

THATCHER HEATERS & RANGES

THATCHER FURNACE COMPANY

Makers of GOOD Heaters and Ranges Since 1850

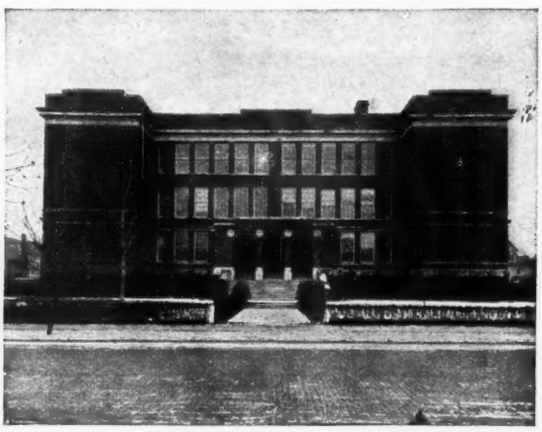
New York 133-135 West 35th St. | *General Offices* Newark, N. J. 39-41 St. Francis St. | Chicago 341 Clark St.

DON'T Lock Them In!

Gravity, Mortise Smith's IMPROVED **& Horizontal Rim**

PANIC EXIT LOCKS

They are *Safeguarding the Lives* of SCHOOL CHILDREN throughout the Land.



One of the 34 Cleveland, Ohio, Schools recently equipped with "SMITH'S IMPROVED."

FRANK F. SMITH HARDWARE CO.

87 CLAY STREET NEWARK, NEW JERSEY

The Lock Smith's of Superior Exit Devices

EXTENSIBLE STEEL PARTITION

THE "EMPIRE TYPE" is adjustable to any ceiling height. All fastenings are concealed, the hollow construction permits of the concealment of telephone, telegraph and annunciator wires within the partition.

May be used over and over again without damage.

Our partition is a product of exceptional merit and utility. It may be taken down and re-erected in another location to suit a new layout without loss or depreciation of any of its parts —it can be used over and over again without damage. For this reason it is the ideal partition for office buildings where tenant changes are frequent. It can be erected overnight; re-arranged or dismantled quickly at less than 25% of the cost of ordinary steel partition and is always 100% salvageable.

It can be finished in any baked enamel finish desired.

Write or phone for blueprints and other data. We also refer you to Sweet's Catalogue for further information.

EMPIRE STEEL PARTITION CO., INC.

3rd Ave. & 11th Street College Point, New York

The Story of STEEL POLES

No. 6 The attention of architects is directed to the fact that we furnish:

"Light Pattern" Poles for ground setting.

"Standard" Poles with 10% extra exposed length for ground setting.

"Standard" Poles with extra butt for setting through roofs, etc.

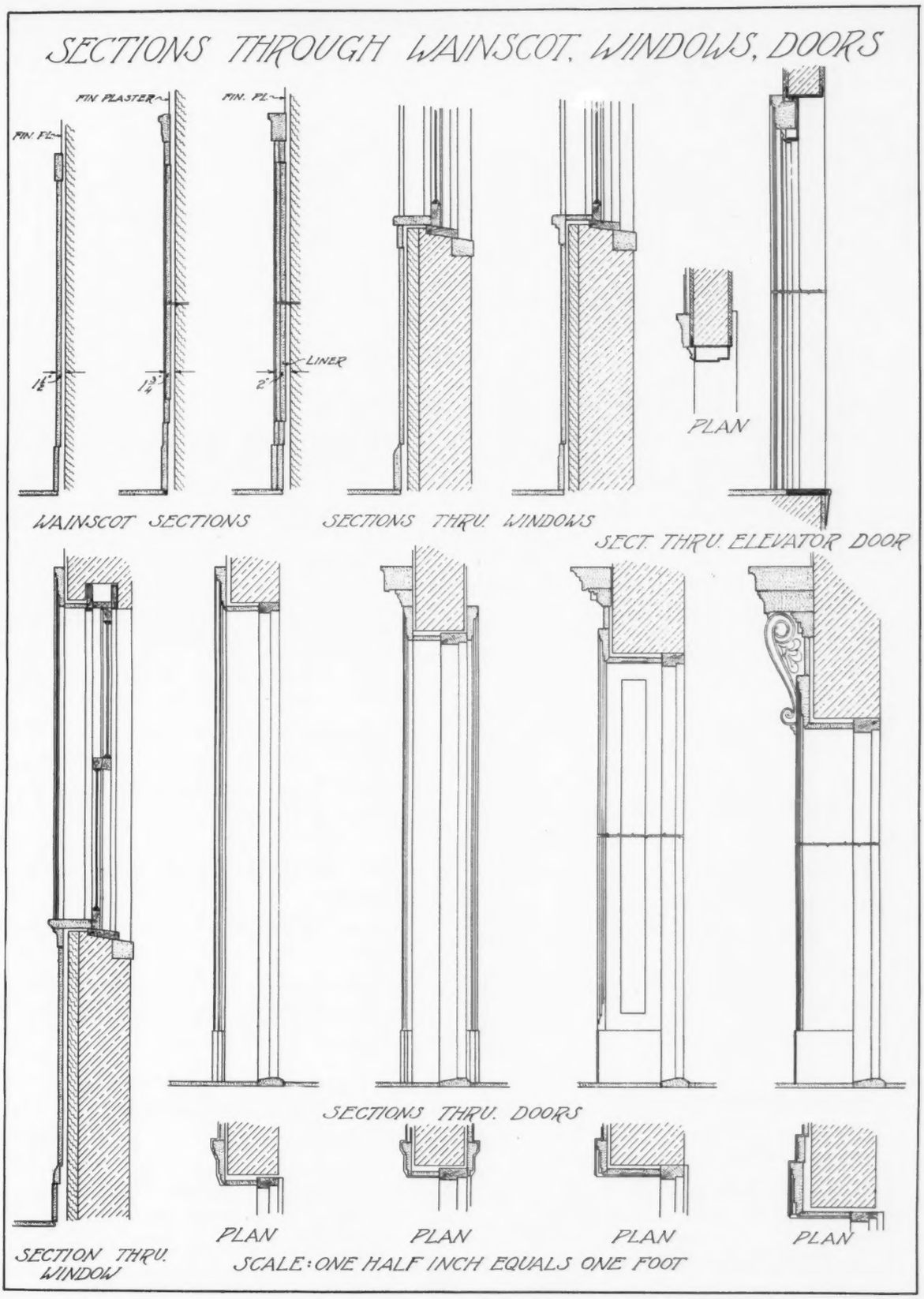
"Standard Masts" for the greater heights.

"Extra Heavy" Roof Poles for those who desire proportionate appearance in perspective besides mere strength.

Send for our Pole Book with specification data and scale drawings.

THE POLE AND TUBE WORKS, INC.

NEWARK, N. J.



We present herewith a reduced reproduction of No. 6 of a series of eighteen detail drawings (showing both exterior and interior details) that we have worked out for the convenience of architects and draftsmen. It is our purpose to show other examples of these drawings in PENCIL POINTS and we invite applications from those who would care to have a set of reprints of the entire series, when issued. Just ask for "Vermont Marble Details."

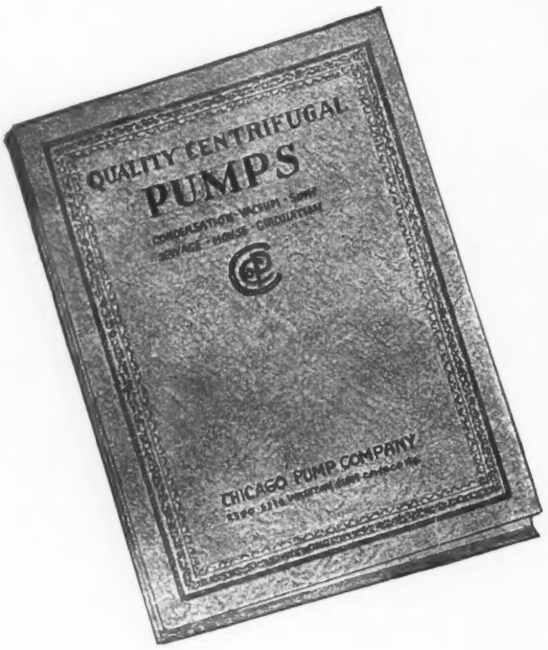
See Sweet's Catalog, Eighteenth Edition, for Specifications and Other Data

VERMONT MARBLE CO. PROCTOR, VERMONT

BRANCHES IN THE LARGE CITIES

3rd Ave. & 11th Street College Point, New York

NEWARK, N. J.



Outline Forms

of

Pump Specifications

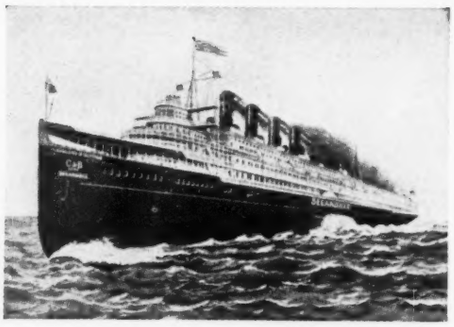
A convenient reference for Architects, Engineers, and those specifying pumping equipment

The specifications are brief and include only the most essential information worded to protect the Architect and his client. At the same time they give the contractor a clear conception of what is needed.

SEND FOR YOUR COPY.

Chicago Pump Company

2320 WOLFRAM ST. CHICAGO, ILL.



One of several Great Lake Boats equipped With R. U. V. Ultra Violet Ray Drinking Water Systems under Government Specification

Quality Sterilizers for Swimming Pool Recirculating Systems

THE Water Sterilizer that is used and meets the rigid bacterial requirements of the United States Public Health Service for drinking water on Great Lakes boats is used extensively in connection with *swimming pool recirculation systems.*

The R. U. V. Ultra Violet Ray Sterilizer is used wherever a water free from disease producing bacteria is required. It is fully guaranteed and will not, under any circumstances, add an injurious element to the water.

SERVICE TO ARCHITECTS AND ENGINEERS:

The R. U. V. Co. maintains a staff of experts who will supply complete data on *Drinking Water systems or Swimming Pool Recirculating systems.* Equipment specified will be furnished fully guaranteed.

Let us send you literature free of charge.

The R.U.V. Co., Inc.

383 Madison Ave. New York City

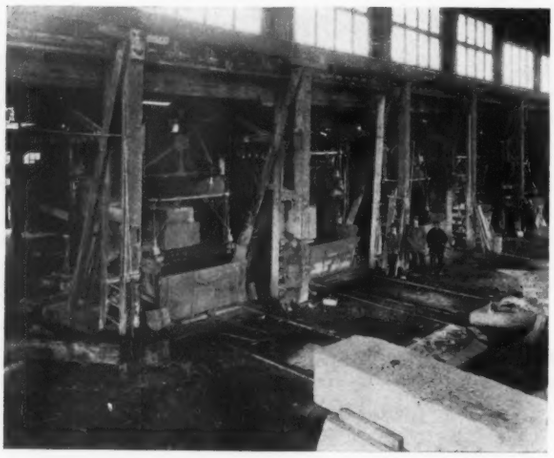
VERMONT MARBLE CO. PROCTOR, VERMONT
BRANCHES IN THE LARGE CITIES

CHURCH OF THE SACRED HEART, NEW ORLEANS, LA. EMILE WEIL, ARCHITECT, ALBERT BENDER-NAGEL, ASSOCIATE ARCHITECT. LIONEL F. FAVRET, CONTRACTOR.

NUMEROUS ELABORATE FEATURES IN POLYCHROME TERRA COTTA WERE FURNISHED BY US FOR THIS CHURCH. (SEE OCTOBER ISSUE PENCIL POINTS, PAGE 93)

PHOTOGRAPH TAKEN JUST BEFORE SHIPPING, OF STATUE FURNISHED IN UNGLAZED NEW JERSEY TERRA COTTA.

THE NEW JERSEY TERRA COTTA COMPANY
OFFICE, SINGER BUILDING, NEW YORK CITY ESTABLISHED 1888 WORKS, PERTH AMBOY, NEW JERSEY



F. DE BELLEGARDE, INC.

MARBLE AND STONE

Office, Yard, Mill and Wharf

1039 Boulevard, Long Island City, N. Y.

We own and operate the largest and best quarries for
White Italian and English Veined marble.
We own and operate our own Sawmill
Eight (8) Saw Gangs at your service
All foreign marbles

C. FABBRICOTTI E B. FABBRICOTTI & FIGLI
Carrara, Italy

N. LAZZONI & FIGLIO
Carrara, Italy

ES
PRODUCTS

ES ELECTRIC DUMBWAITERS

Are installed to operate on any available commercial electric current. Different loads, speeds and types of push button controls are used, depending on the class of building and the service desired.

ES ELECTRIC DUMBWAITERS

Can be used to advantage by any business occupying two or more floors. They are in use in every line of business and are conveying almost every conceivable article. Are doing their part towards the successful operation of the modern many-storied hotel, club, hospital and store.

See Sweet's Architectural Catalog and Exhibit at Architects' Samples Corporation (N. Y. C.)

ELEVATOR SUPPLIES COMPANY, INC.

Main Offices and Works:—HOBOKEN, NEW JERSEY

BRANCH OFFICES:

CLEVELAND
1039 Walnut Avenue

ST. LOUIS
Railway Exchange Bldg.

PHILADELPHIA
1714 Ludlow Street

CHICAGO
111 S. Jefferson Street

LOS ANGELES
1120 S. Hope Street

SAN FRANCISCO
186 Fifth Street

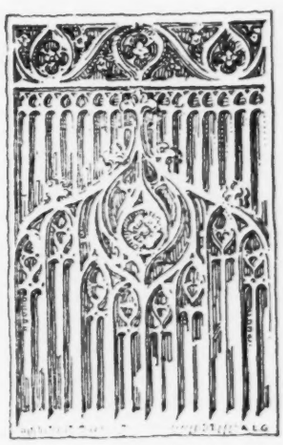
FERROCRAFT GRILLES

TUTTLE & BAILEY MFG CO.

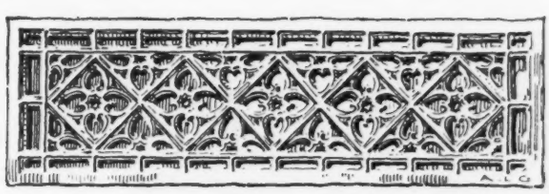
For Over 75 Years Makers of Decorative Metal Grilles

2 WEST 45TH STREET, NEW YORK

Main lobby in the Bush Terminal Building, which is equipped throughout with Ferrocraft Grilles.
Helmle & Corbett, Architects

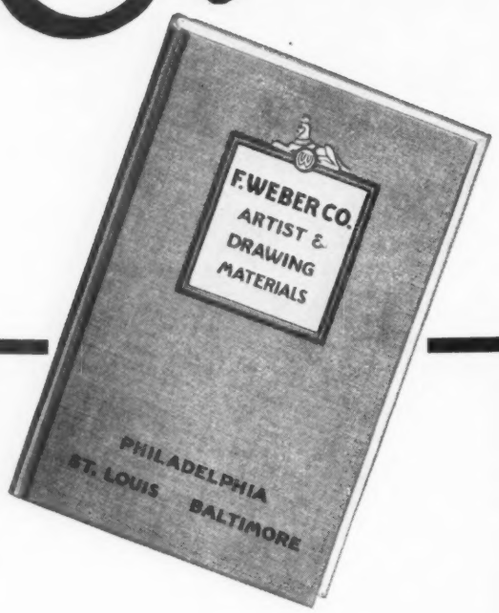


Design No. 126



Design No. 371

Complete!



The New Weber Catalog

Complete in every sense of the word, the New Weber Catalog not only lists every known drawing room product, but also offers to you a new catalog service. As a time and labor saver as well as an assurance of getting just what you want when you want it, you will find this convenient purchasing plan invaluable in your ordering.

In this complete listing of drawing room supplies, many products are in every-day demand. These products can be purchased either through our dealers or direct from our factory. On the other hand, there are those products with a scattered demand that must be obtained direct.

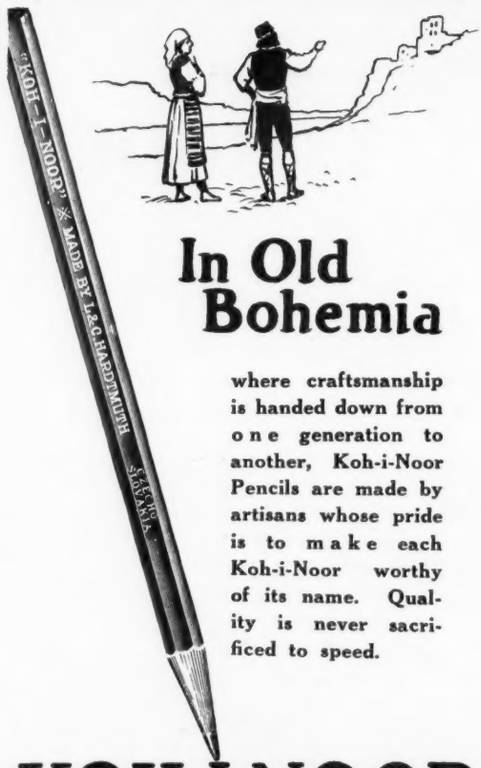
It is the policy of this company to give prompt and careful attention to all mail orders and inquiries. Write today to Dept. PP for the New Weber Catalog.

F. WEBER CO.

1220 Buttonwood St., Philadelphia

705 Pine St., St. Louis — 1125 Chestnut St., Philadelphia — 227 Park Ave., Baltimore

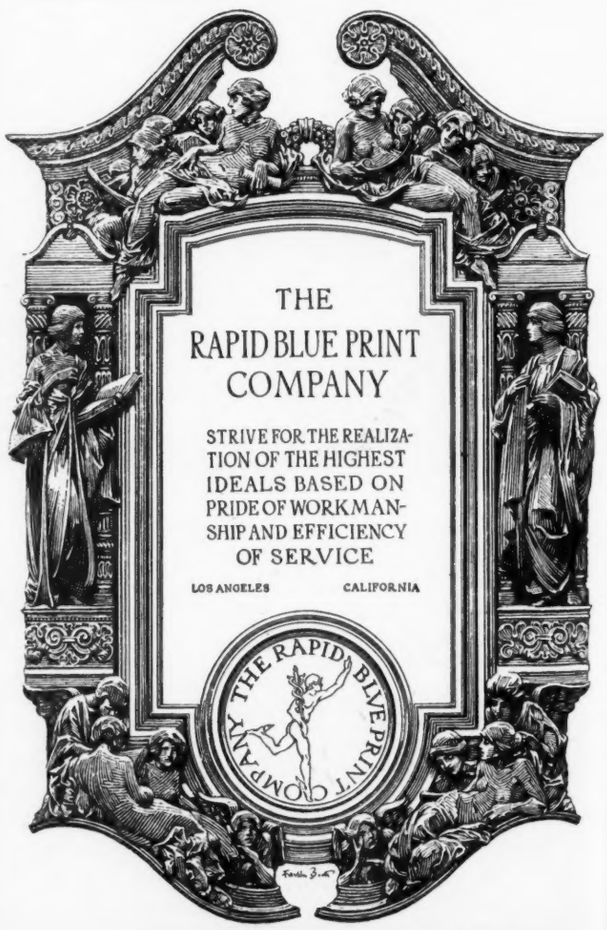
WEBER
Cataloged Drawing Materials



In Old Bohemia

where craftsmanship is handed down from one generation to another, Koh-i-Noor Pencils are made by artisans whose pride is to make each Koh-i-Noor worthy of its name. Quality is never sacrificed to speed.

KOH-I-NOOR
The perfect pencil


THE
RAPID BLUE PRINT
COMPANY
STRIVE FOR THE REALIZATION OF THE HIGHEST IDEALS BASED ON PRIDE OF WORKMANSHIP AND EFFICIENCY OF SERVICE
LOS ANGELES CALIFORNIA
THE RAPID BLUE PRINT COMPANY

AQUARELLE CANSON
(SMOOTH SURFACE)

A hand-made paper for Architects with:

Smooth finish for pen and ink drawings.

Great resistance to permit vigorous erasure without injuring the surface.

Hard sized surface to withstand the scrubbing and soaking of wash and watercolor work.

Substantial thickness to eliminate permanent buckling.

Lower price to place it within the reach of everyone.

19"x25" - 55 lbs. - 500 sheets
22"x30" - 77 lbs. - 500 sheets

Each sheet is watermarked
AQUARELLE CANSON FRANCE

Insist upon getting this paper from your dealer or write us for samples. Accept no substitute!

CANSON & MONTGOLFIER
Manufacturers of VIDALON Papers
461 Eighth Avenue New York City

A Lithoprint

LOOKS LIKE A LITHOGRAPH
COSTS LIKE A BLUE PRINT

LITHOPRINTS are ink reproductions on any material of

TRACINGS - MAPS - PLANS

Bulletins of special interest to Architects, Engineers & Manufacturers sent on request

LITHOPRINT COMPANY *of* NEW YORK, Inc.
41-43 Warren Street, New York, N. Y.

VENUS PENCILS

The Largest Selling Quality Pencil in the World

IT would be impossible to estimate the total annual value of all the construction work, machinery and other products and enterprises made from plans or sketches *prepared with* VENUS PENCILS.

But it is a matter of accurate record to estimate the *overwhelming preference for* Venus Pencils among leading engineers and technical men.

17 Black Degrees
6B Softest to 9H Hardest
also 3 Copying

Plain Ends per doz. - $1.00
Rubber Ends per doz. $1.20

At stationers, drafting supply dealers and stores throughout the world.

VENUS ERASERS
The first Eraser of its kind made in America—and *still the best.* 12 sizes.

American Lead Pencil Co.
205 Fifth Avenue, New York
and London, Eng.

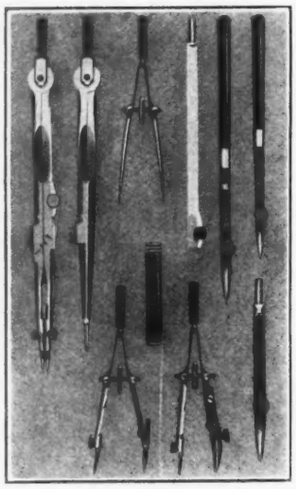
Send coupon today for free sample

Send samples VENUS degrees checked below—and a VENUS ERASER.

For bold heavy lines - - - 6B-5B-4B-3B
For general writing and sketching - 2B-B-HB-F-H
For clean, fine lines - - 2H-3H-4H-5H-6H
For delicate, thin lines - - - - 7H-8H-9H

Name .....
Address .....
Profession .....

Alteneder Drawing Instruments Appreciated the World Over for Their Excellence



Every Genuine Alteneder Instrument is stamped "T. Alteneder & Sons," "T. A.," or "T. A. & Sons."

Set illustrated is No. 2075. All pens are of the ALTENEDER Patent Spring-hinge Type. Furnished in Folding Pocket Case for $50.00; in Morocco-covered Case for $48.00.

Catalogue on request

THEO. ALTENEDER & SONS
1217 Spring Garden St. Philadelphia, Pa.

Horizontal—Vertical—Slanting

"best from every angle"

Easily and quickly adjusted to the position and height desired, and rigidly held there. Substantial, durable construction without unnecessary weight or bulk. These features combine to make the

AMERICAN DRAWING TABLE

the standard equipment of many of the country's largest drafting rooms. Its workmanship is truly representative of K & E Quality. The logical table to choose for highest efficiency in your drafting room and the comfort of the draftsmen.

Send for Booklet No. 3314 "Drafting Room Furniture."

"American" Drawing Tables have tops of finest quality white pine. Sizes from 31 x 42" up to 48 x 120"

KEUFFEL & ESSER CO.

NEW YORK, 127 Fulton Street, General Office and Factories, HOBOKEN, N. J.
CHICAGO 518-20 S. Dearborn St. ST. LOUIS 817 Locust St. SAN FRANCISCO 30-34 Second St. MONTREAL 5 Notre Dame St. W.
Drawing Materials, Mathematical and Surveying Instruments, Measuring Tapes

"The HIGGINS" Triangle"

Drawing Board Paste-Drawing Ink-Photo Mounter
Used by Most Architects for over 40 Years

CHAS. M. HIGGINS & CO.
271 Ninth Street Brooklyn, N.Y.
CHICAGO LONDON

A valuable series of anatomical poses for specific use of the Architect, Artist and Sculptor. Figure construction being so important, great care has been given to the lights and shadows, rendering all possible detail.

400 Poses by 20 different models, clear modelling -- sharp lightings.

Miniature Sample Series A 25c.
Entire Set of Miniatures $1.00
Photos 5x7 size, 8 for $2.00
Photos 7x10 size, 8 for $3.50

Shaw Pub. Co. Inc., Dept. F 12
44 Boylston St., Boston 11, Mass.

ARCHITECTURAL COMPOSITION

By

Professor N. C. CURTIS

This work is based on *GUADET—"ELEMENTS ET THEORIE DE L'ARCHITECTURE."* It contains 250 carefully selected drawings with 300 pages of text and a bibliography of the most useful reference works in architecture.

The work is devoted mainly to the study of plan, such difficult problems as angular connections, curved with rectangular and polygonal rooms. All other phases of architectural composition are covered, viz., fundamental esthetic laws of architecture, walls, doors, windows, roofs and domes, antique orders, vaults, vestibules, corridors, facades and bays, towers, proportion and scale.

Buckram bound in heavy board covers size 8 x 10 inches—price $6.00 postpaid

J. H. JANSEN, Publisher

CAXTON BLDG. CLEVELAND, O.

Would You Permit

James McNiell Whistler

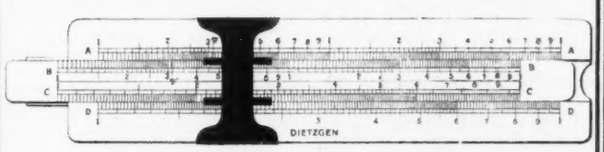
to recommend your drawing paper? Throughout his artistic life he chose—

J WHATMAN

Genuine Hand-Made
DRAWING PAPERS

Send for Folio No. 56 a handy sample book of sizes, surfaces and weights, free to artists, architects and engineers.

H. REEVE ANGEL & Co., Inc.
7-11 Spruce Street New York, N. Y.



Why not use the quick *mechanical* way?

to solve all multiplication, division and proportion problems—the Slide Rule way. It saves time and lessens labor.

SCHOLAR SLIDE RULES

inexpensive, practical, enable anyone to learn the use of the Slide Rule.

In two sizes, 5 and 10 in., of heavy cardboard, equipped with indicator.

Prices on Request

EUGENE DIETZGEN CO.

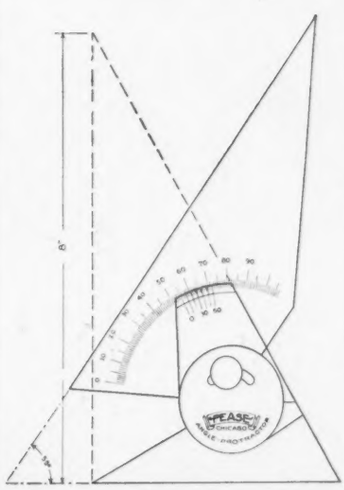
Right goods at right prices
continuously since Year 1885

Branches:
Chicago New York
New Orleans Pittsburgh
San Francisco

Philadelphia Washington

Factory:
Chicago, Illinois

Fill In The Coupon



If you divide circles, transfer angles (etc.), and we will immediately forward a Pease Angle Protractor to you for 10 days' free trial.

It is a great time saver, and is inexpensive. The price is only $1.95 and it will save enough of your time to pay for itself in a short time.

Furthermore you take no chance—we guarantee to refund your money in full if you are not satisfied, providing you return the instrument to us within 10 days in first class condition.

The C. F. Pease Company
803 North Franklin St.
Chicago, Ill.

Blue Printing
Machinery and Accessories

Drafting Room
Furniture and Supplies

Drawing Instruments

The C. F. Pease Company,
803 N. Franklin St., Chicago.
Gentlemen: Attached find (check) (money order) for $1.95. Please send me a Pease Angle Protractor on your free trial plan.

Name .....
City ..... State .....

HORN PRODUCTS

HYDRATITE

WATERPROOFS

STUCCO

CONCRETE

CEMENT MORTAR

Send for Specifications

A. C. HORN CO.

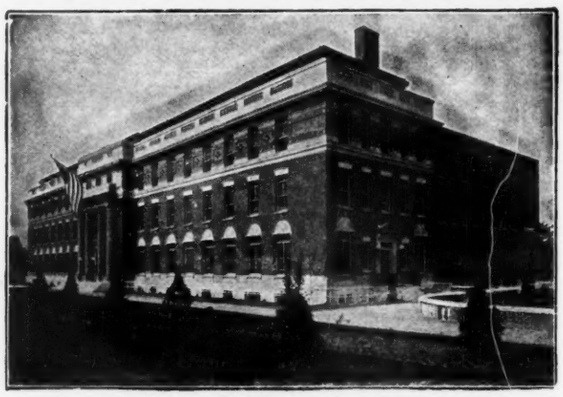
900 Horn Building

Long Island City New York

ORIGINATORS OF

SASH CHAINS

"Giant Metal" "Red Metal" and Steel

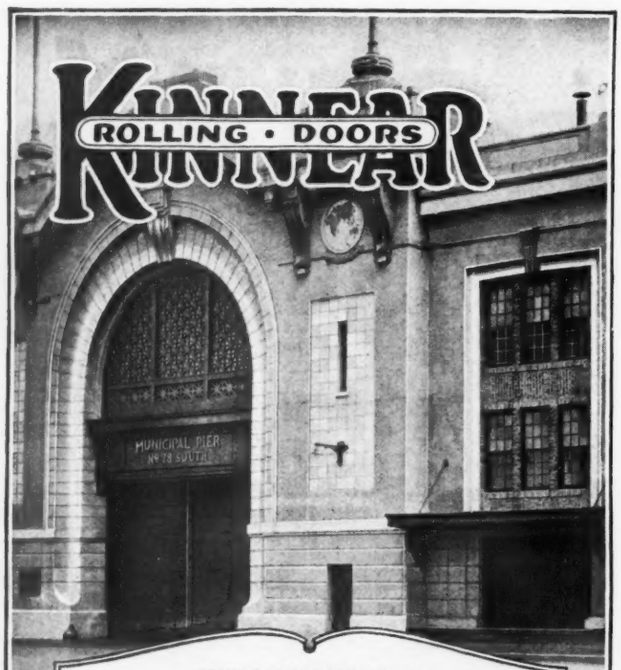


Soldiers' and Sailors' Masonic Memorial Hospital, Utica, N. Y.

6,000 FEET No. 1
"GIANT METAL" Sash Chain used in this Building

Sash Chain Catalog A-1 Sent on Request
See Page 1253, Sweet's Catalog, 18th Edition

The Smith & Egge Mfg. Co.
BRIDGEPORT, CONN.



MEET EVERY NEED

KINNEAR Steel Rolling Doors and Shutters not only afford protection against fire and theft and the weather, but are good in appearance. Mechanically correct, they give no trouble. Our branch offices in principal cities and our Engineering Department are at your service.

Write us your needs and for illustrated book.

The Kinnear Manufacturing Company
370-380 Field Ave., Columbus, Ohio.

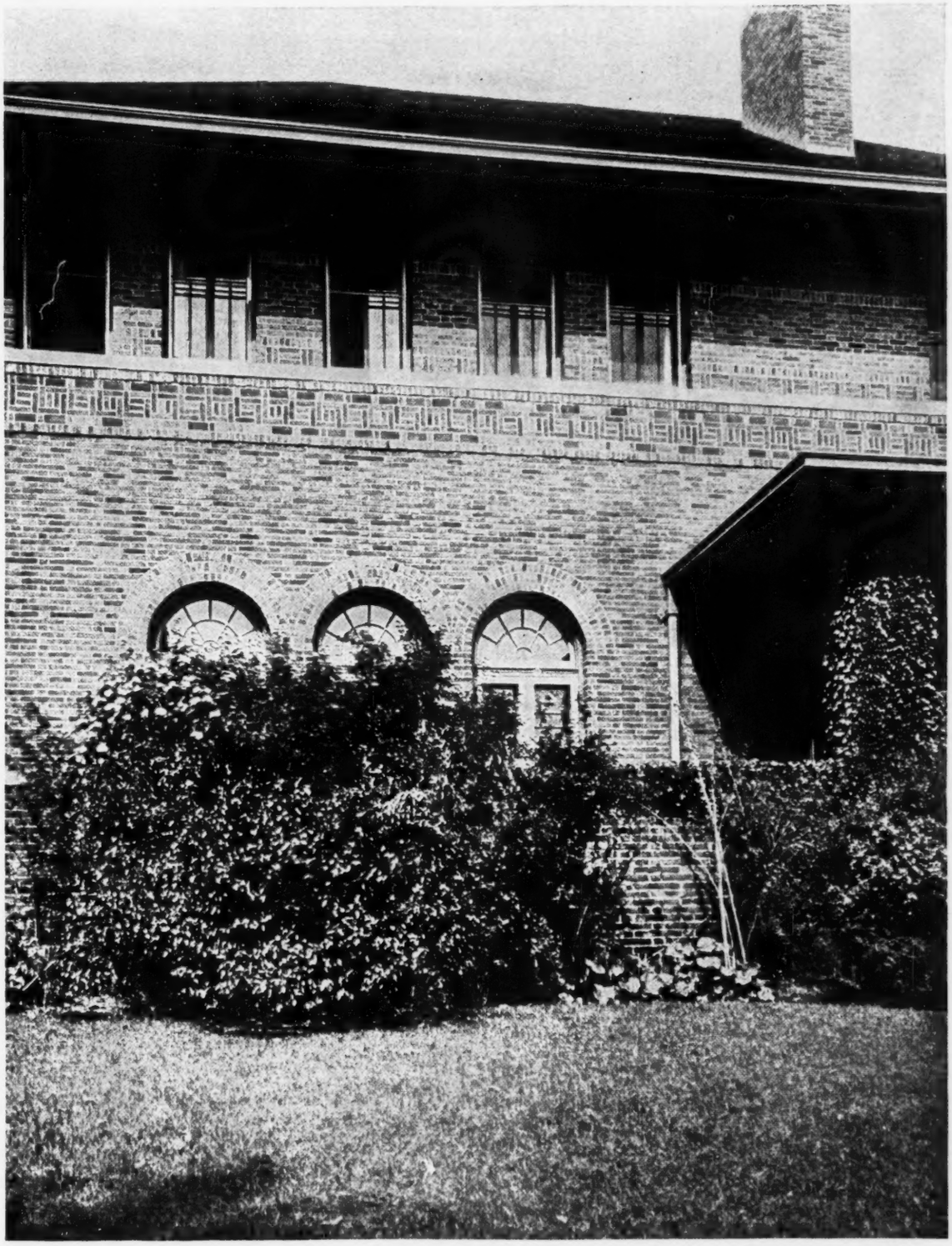
FERALUN
Anti-Slip Treads

BRONZALUN
Anti-Slip Treads

ALUMALUN
Anti-Slip Treads

A Safe Tread for Every Purpose

AMERICAN ABRASIVE METALS CO.
50 CHURCH STREET, NEW YORK CITY

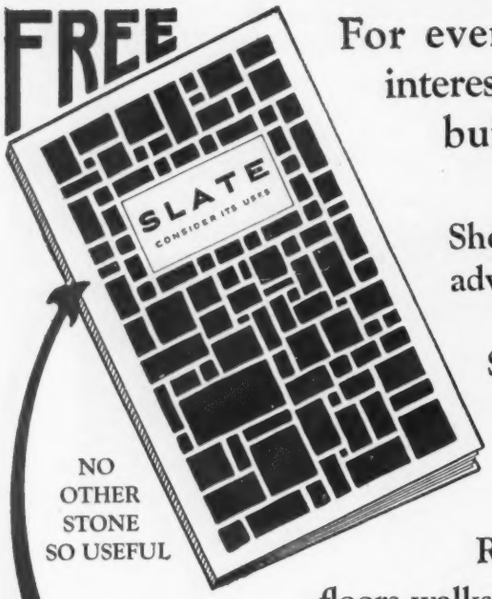


Detail of Residence, Evanston, Illinois. Perkins, Fellows & Hamilton, Architects

A DOUBLE stretcher Flemish Bond is seen in the field of this charming detail. The threefold rowlock arches and the exquisite pattern work in the broad belt course below and the wall above the windows show a fine treatment of brickwork. In "Architectural Details in Brickwork" you will find many other examples of artistic brickwork in which only standard brick are used. The half-tone plates, issued in three series, each in an enclosed folder ready for filing, will be sent to any architect requesting them on his office stationery.

Address, American Face Brick Association, 1760 Peoples Life Building, Chicago, Illinois.

FREE



For everyone interested in building

Shows the advantages of SLATE for

NO OTHER STONE SO USEFUL

Roofing, floors, walks, paving, blackboards, structural, sanitary, electrical and general purposes

SLATE
CONSIDER ITS USES

NATIONAL SLATE ASSOCIATION
757 DREXEL BUILDING PHILADELPHIA

Arch'ts. Patterson King Corp., New York City, used long 24-inch "CREO-DIPT" Stained Shingles in "Dixie White" with wide exposure on side walls and 18-inch Moss Green Roof on home of Roderick A. Dorman, Bronxville, N. Y.

The soft color tones in any of 30 shades of red, green, gray or brown, or in special "Dixie White" obtainable in "CREO-DIPT" Stained Shingles have none of the "painty" effects often noticeable in other materials.

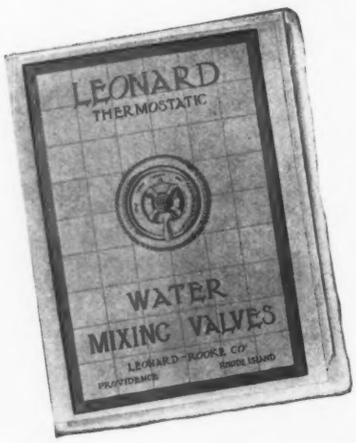
The long 24-inch "CREO-DIPT" Stained Shingles with a wide exposure effect on side walls add individuality and insure economy.

Architects should write for Color Pad and Portfolio of Homes of all Sizes by noted Architects.

CREO-DIPT COMPANY, Inc.
General Offices: 1097 Oliver St., No. Tonawanda, N. Y.
Factories: No. Tonawanda, N. Y., St. Paul, Minn., and Kansas City, Mo.
Sales Offices: Principal Cities.
Leading Lumber Dealers Everywhere Carry Standard Colors in Stock.

Portfolio of Homes

"CREO-DIPT"
REG. U. S. PAT. OFF.
Stained Shingles



HAVE YOU THIS BOOK IN YOUR FILES?

Our loose-leaf catalog of Model B and Type L-9 "Leonard" Thermostatic Water Mixing Valves, contains 23 pages of thoroughly useful information which should be at your hand when providing for the inclusion of Thermostatic Water Mixing Valves.

In this catalog you will find Roughing-in Dimensions and Detail Drawings.

There is a "LEONARD" for every use.

A copy will gladly be sent to any reader of Pencil Points upon request.

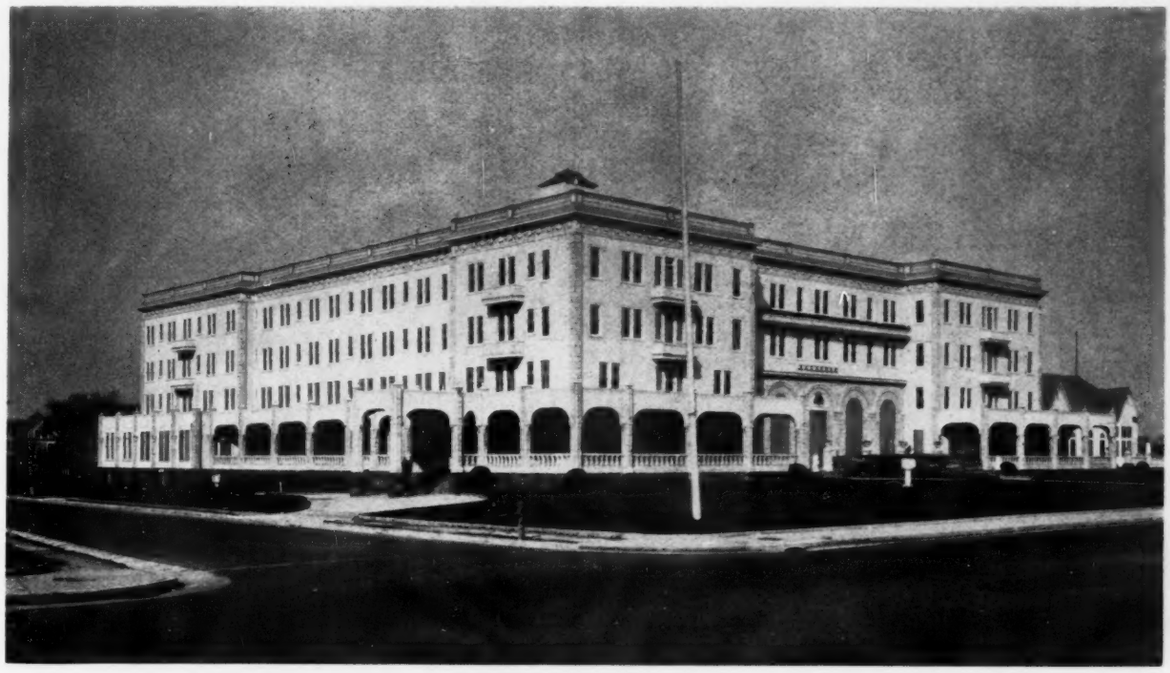
LEONARD-ROOKE CO.
PROVIDENCE - RHODE ISLAND

THE CUTLER MAIL CHUTE

manufactured and installed to sustain a reputation for good work and service enjoyed by us for nearly forty years.

Specify Model F
Standard equipment
for Cutler quality
at least cost.

CUTLER MAIL CHUTE CO.
OFFICES AND FACTORY
ROCHESTER, N. Y.



HOTEL SCARBORO

LONG BRANCH
N. J.

THE Scarboro Hotel is one of the important Hostelries on the Ocean Boulevard at Long Branch—the exterior wall finish is pink stucco—the trim featuring elaborate motifs of marine life is of "SOUTH AMBOY" Terra Cotta.

The base is rusticated, glazed black granite Terra Cotta, the balustrade of the promenade, the piers and the imposing main entrance feature are full glazed terra cotta of pink mottled color, the coat of arms over the entrance is shaded polychrome in five colors.

BALUSTER DETAIL

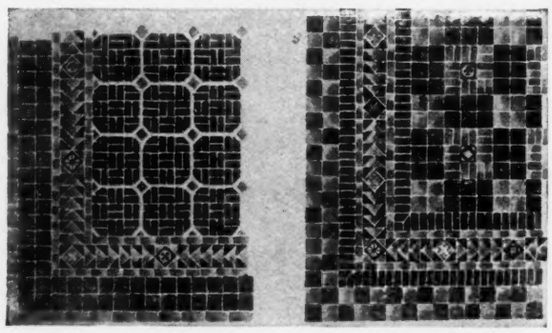
ASSEMBLED PORCH BALUSTRADE

COAT OF ARMS OVER ENTRANCE

South Amboy, N. J. **The South Amboy Terra Cotta Co.** 150 Nassau St., N. Y.

Rookwood lamp in mirror black glaze with jade green mounting and shade.

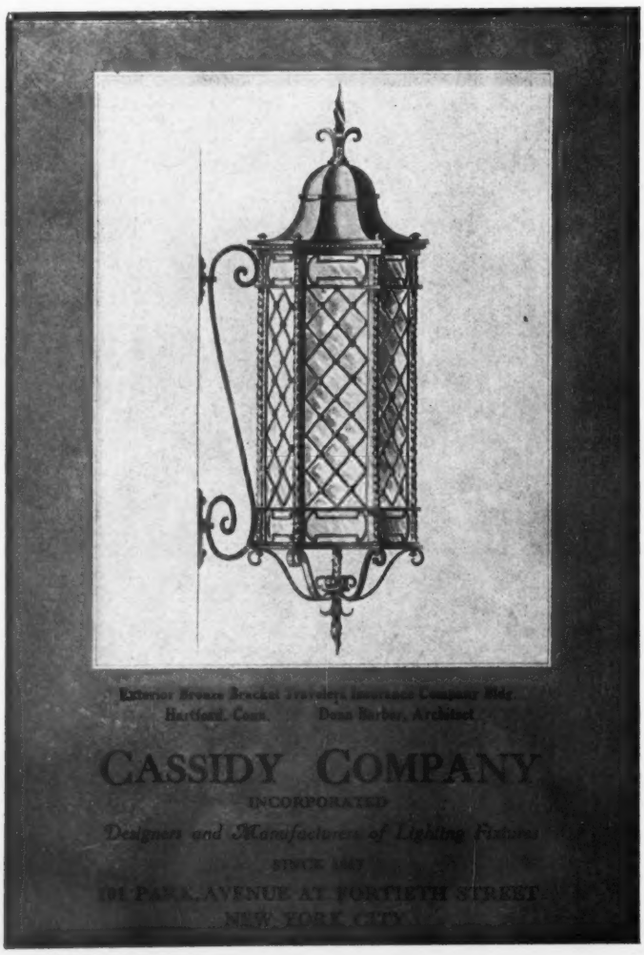
ROOKWOOD
POTTERY AND TILES
THE ROOKWOOD POTTERY COMPANY
Designing Dept., Cincinnati, Ohio



HAND MADE FLEMISH TILE
MANUFACTURED BY
MUELLER MOSAIC CO.
TRENTON, NEW JERSEY
MAKERS OF
FLEMISH AND FAIENCE TILES
FOR
EXTERIOR AND INTERIOR APPLICATION

FAIENCE
M M C

NEW YORK OFFICE
156 W. 49th ST.
SEND FOR BOOKLET



Exterior Bronze Bracket (Travelers Insurance Company Bldg. Hartford, Conn. Donn Barber, Architect)

CASSIDY COMPANY
INCORPORATED
Designers and Manufacturers of Lighting Fixtures
SINCE 1887
101 PARK AVENUE AT FORTIETH STREET
NEW YORK CITY

W. F. Dominick, Architect N. Y.

The Outside Timbers and Boarding of this House are *stained* with

Cabot's Creosote Stains

All kinds of Exterior Lumber can be Stained at less than *half the cost of Painting*

THE Coloring Effects are much handsomer, because the Stains are transparent and bring out the beauty of the grain and texture of the wood, while a painty coating covers and spoils it.

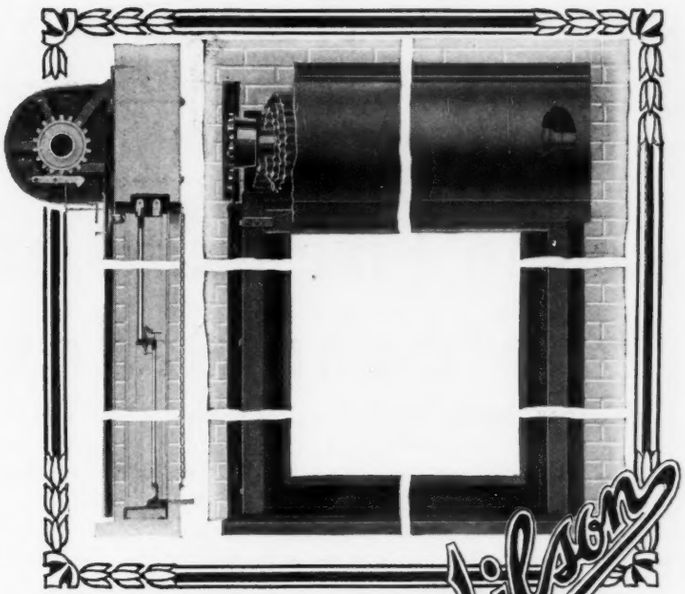
Cabot's Stains cost 50% less than paint, look 100% better, and wear just as long, or longer. The Creosote penetrates and thoroughly preserves the wood.

Full information sent on request

SAMUEL CABOT, Inc., Mfg. Chemists, Boston, Mass.

342 Madison Ave., NEW YORK 24 W. Kinzie Street, CHICAGO
525 Market St., SAN FRANCISCO 331 E. Fourth St., LOS ANGELES

Cabot's Stucco and Brick Stains, "Quilt," Damp-proofing, Conservo Wood Preservative, etc.



Wilson Gravity Closing Shutter. Note chain which allows of operation from inside of building.

Wilson

Protection Against Fire from Adjoining Buildings

IF YOURS is a problem that has to contend with fire in adjacent buildings, we recommend for your consideration our gravity closing shutter.

It is entirely self closing either through the fusing, at approximately 160 degrees, of a link on the outside of the building, or it can be closed by hand from inside the building by merely unhooking a chain which holds the automatic device in check.

In either event the closing is automatic and positive. After closing, new link can be inserted and the shutter reset from inside of the building.

Send for our new catalog No. 4 which fully describes the entire line of Wilson Steel Doors and Shutters.

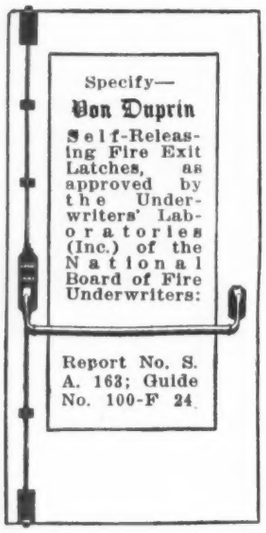
The J. G. WILSON Corporation
11 EAST 36TH STREET, NEW YORK CITY
OFFICES IN ALL PRINCIPAL CITIES

Established 1876
Wilson
DOORS - PARTITIONS - BLINDS
WARDROBES
THE J.G. WILSON CORPORATION
NEW YORK CITY

Von Duprin

Self-Releasing Fire Exit Latches

Excess Safety


Specify—
Von Duprin
Self-Releasing Fire Exit Latches, as approved by the Underwriters' Laboratories (Inc.) of the National Board of Fire Underwriters:
Report No. S. A. 163; Guide No. 100-F 24.

Von Duprin Self-Releasing Fire Exit latches are made better than might seem necessary.

All parts are made with a factor of safety far beyond that demanded by the work they are to do.

The materials are the best we can buy.

The finish is in keeping with that of the finest buildings.

All this is done because we believe that this excess quality adds more in value than in cost—and because we know that nothing less than the best is good enough where the protection of human life is at stake.

Complete details in "Sweet's," pages 1415-1419, or ask us for Catalog 12-W.

VONNEGUT HARDWARE CO.
Indianapolis, Ind.

Plant for Fulton Bag Company, Minneapolis. Kees & Colburn, Architects.

Helps put wings to specification writer's work

We knew you wanted something that would give in a jiffy just the data needed for specifying gypsum tile in fireproof construction. So we got out a concisely written specification folder on six popular U S G products.

In this new folder you will find typical specifications for Pyrobar Roof Tile, Pyrobar Partition Tile, Pyrobar Floor Voids, Pyrobar Beam and Column Covering, Jester-Sackett Systems, and Pyro-fill Monolithic Construction. Also approved methods of plastering these products.

If your file lacks this helpful, time-saving folder simply send us the memo at the bottom of this page. As the supply is limited we suggest that you act promptly.

UNITED STATES GYPSUM COMPANY

World's Largest Producers of Gypsum Products

General Offices: Dept. K, 205 W. Monroe Street, Chicago, Ill.

PYROBAR

GYPSUM TILE

U S G

United States Gypsum Co.

Dept. K,
205 W. Monroe St.
Chicago, Ill.

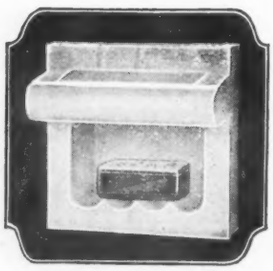
Please send a copy of the new Pyrobar Specification Folder to:

Name .....

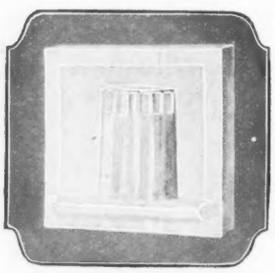
Complete Address .....

.....

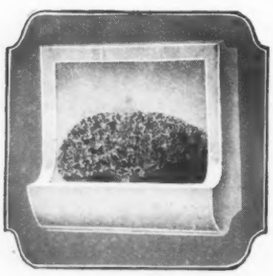
Why a *tiled* bathroom should have *china* fixtures



Combination Soap Holder and Safety Wall Grip



Tumbler Holder



Sponge Holder

FOR covering bathroom walls, tile is the accepted standard but the fixtures built into these walls should be CHINA.

Tile fixtures, have a thinly glazed surface, which may craze within a few months. These cracks if filled with soap particles appear soiled and unsightly.

Fairfacts Fixtures are made of solid snow-white CHINA. They are durable—they will even outlast the tiled walls and they never crack, craze or discolor.

Fairfacts Fixtures are made in a wide variety of styles, including many combination fixtures. They cover practically every possible need of the bath. The designs are simple, distinctive, and harmonious.

Fairfacts Fixtures are installed by tile contractors—the only trade that does this work and should be included in the tile contract. We do not sell the plumbing trade.

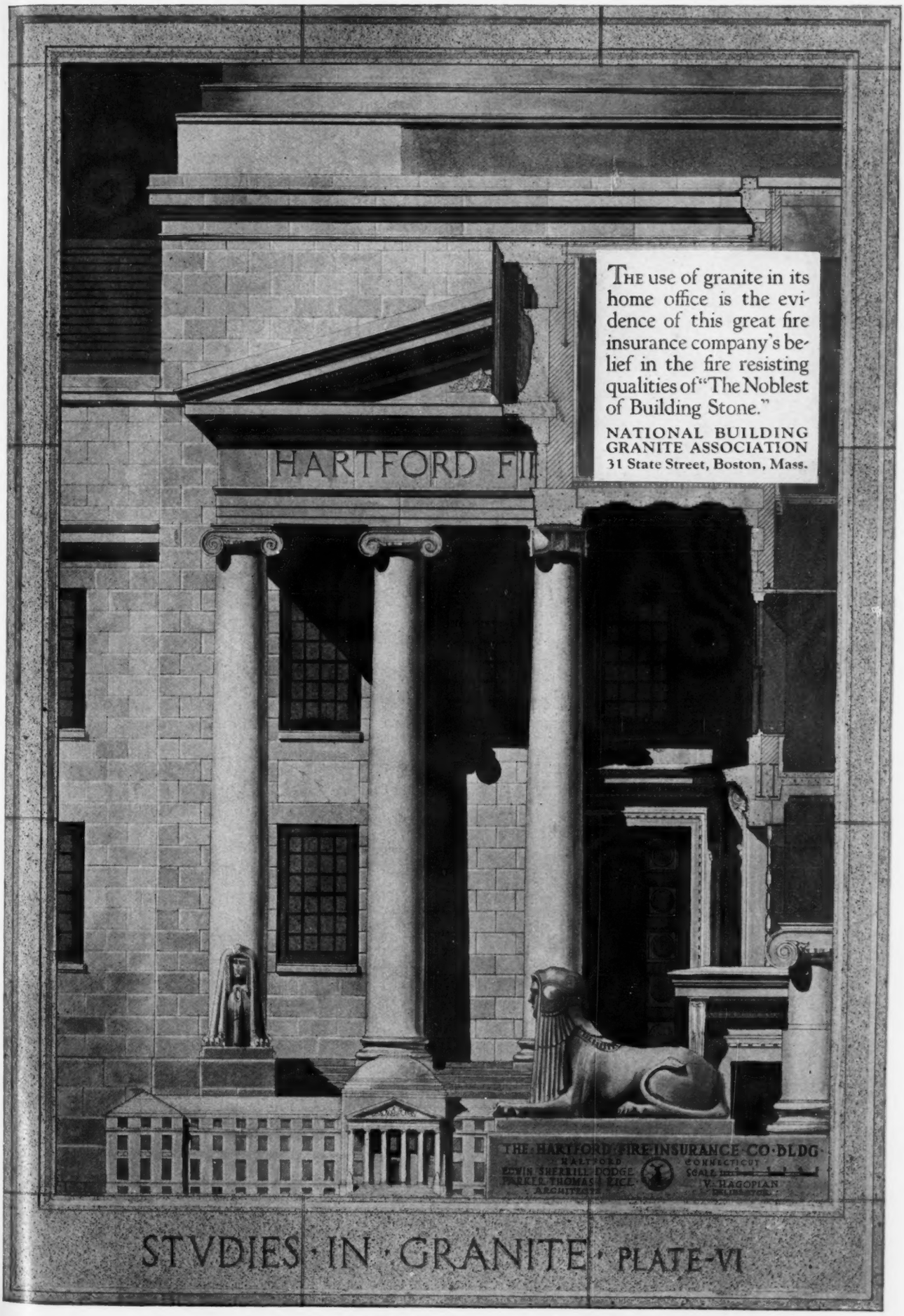
Send for Catalog F. Details and Specifications also appear in Sweet's Architectural Catalog.

THE FAIRFACTS COMPANY, INC.
Dept. P,
234-236 West 14th Street **New York City**

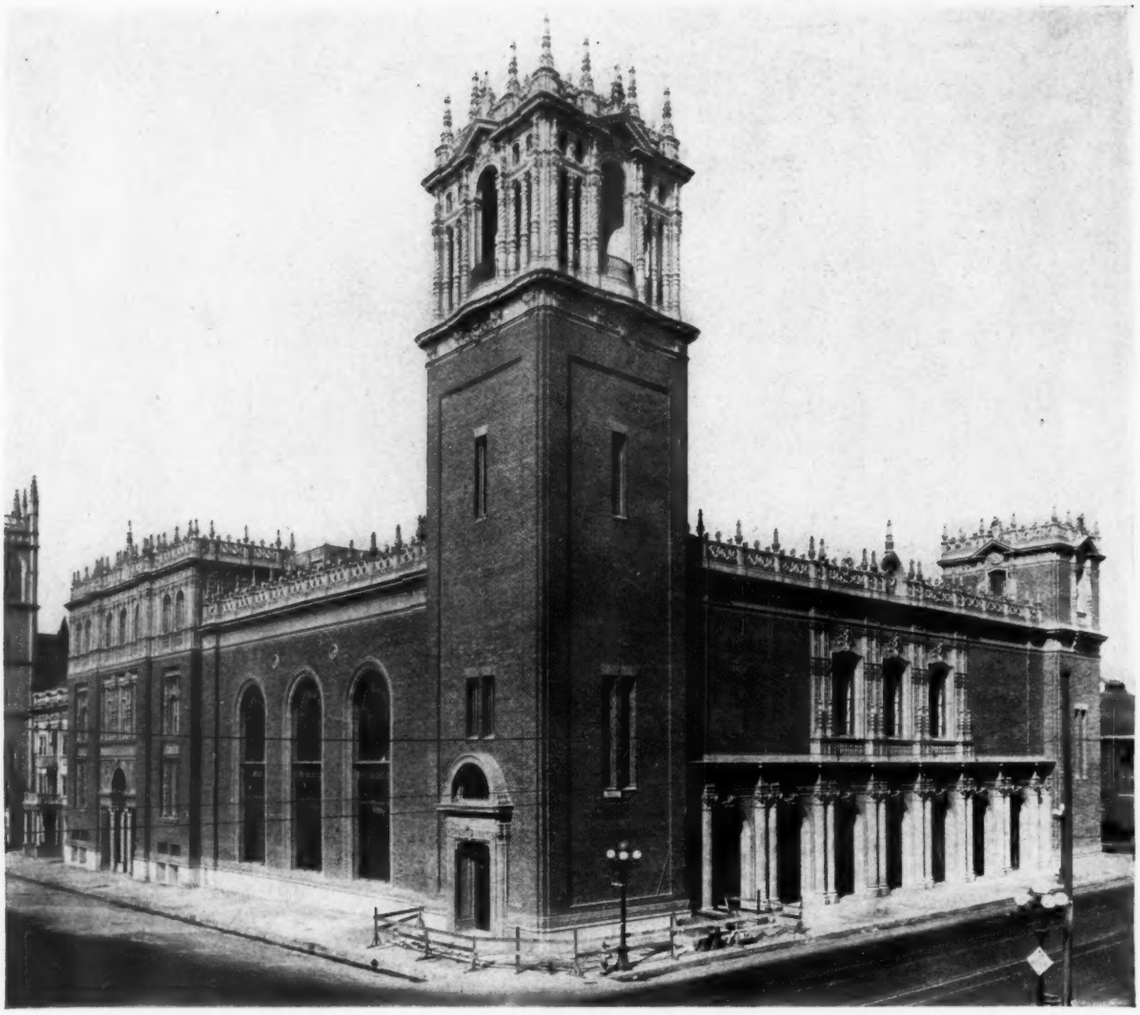
Look for this BATHROOM Fairfacts FIXTURES *trademark*

Fairfacts Fixtures

BUILT IN YOUR BATHROOM WALLS


THE use of granite in its home office is the evidence of this great fire insurance company's belief in the fire resisting qualities of "The Noblest of Building Stone."
NATIONAL BUILDING GRANITE ASSOCIATION
31 State Street, Boston, Mass.
HARTFORD FI
THE·HARTFORD·FIRE·INSURANCE·CO·BLDG
HARTFORD CONNECTICUT
EDWIN SHERRILL DODGE
PARKER THOMAS & KELEY
ARCHITECTS
SCALE
V. HAGOPIAN
DELINEATOR
STVDIES·IN·GRANITE·PLATE-VI

On request a complete folio of these Granite Studies will be reserved for you.



FIRST METHODIST EPISCOPAL CHURCH, LOS ANGELES, CALIFORNIA. JOHN C. AUSTIN, ARCHITECT

FOR DISTINCTIVE RESULTS

Terra Cotta offers you the following possibilities:

Elaborate enrichment in decorative elements without excessive cost.

Adaptability to all motives of stylistic design.

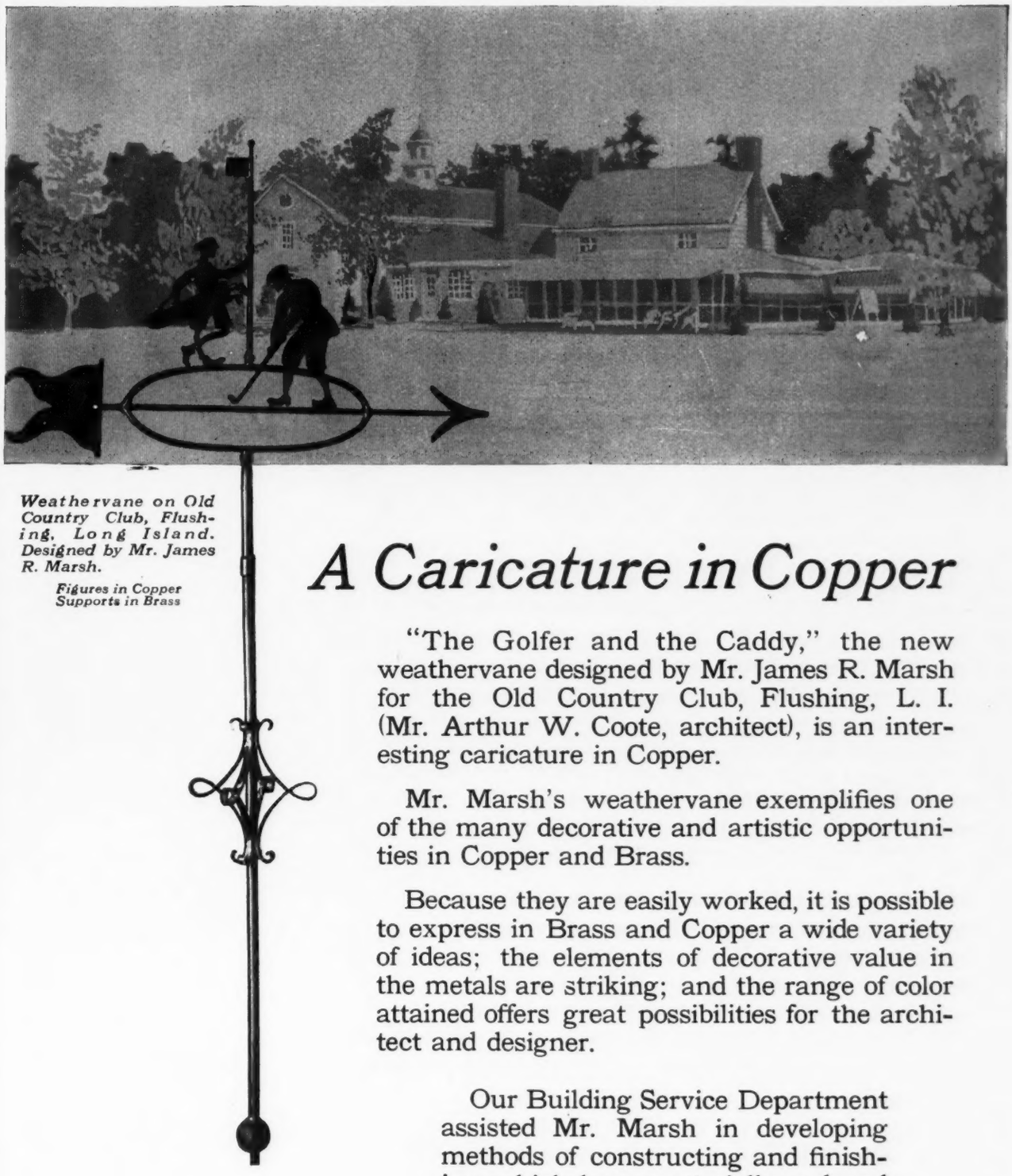
Color effects in the widest range offered by any permanent medium.

Fire resistant and cleanable properties of surpassing merit.

National Terra Cotta Society, representing the Terra Cotta Industry in the United States, will be glad to assist you with literature and data for specifying effectively. Address 19 West 44th Street, New York City.

TERRA COTTA

Permanent *Beautiful* *Profitable*



Weathervane on Old Country Club, Flushing, Long Island. Designed by Mr. James R. Marsh.

Figures in Copper Supports in Brass

A Caricature in Copper

"The Golfer and the Caddy," the new weathervane designed by Mr. James R. Marsh for the Old Country Club, Flushing, L. I. (Mr. Arthur W. Coote, architect), is an interesting caricature in Copper.

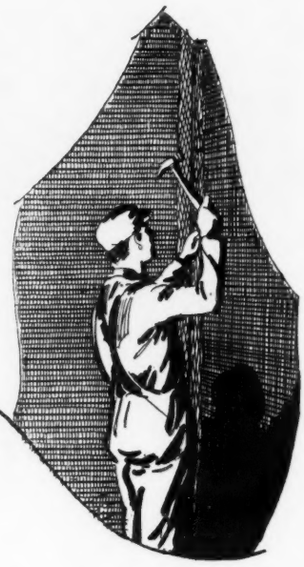
Mr. Marsh's weathervane exemplifies one of the many decorative and artistic opportunities in Copper and Brass.

Because they are easily worked, it is possible to express in Brass and Copper a wide variety of ideas; the elements of decorative value in the metals are striking; and the range of color attained offers great possibilities for the architect and designer.

Our Building Service Department assisted Mr. Marsh in developing methods of constructing and finishing which have materially reduced the cost of his productions in Copper and Brass.

COPPER & BRASS
RESEARCH ASSOCIATION

25 Broadway - New York

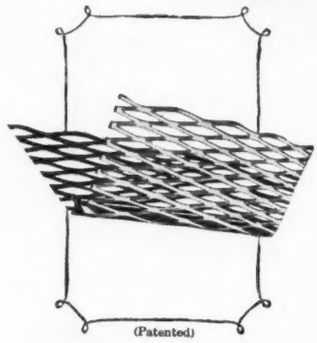


MILCOR metallic construction makes it possible to exclude today in any building, faults which formerly could not be avoided in the most elaborate homes. The expanded metal mesh of these most modern building products dissipates the stresses and shocks that cause cracking in walls of ordinary construction and provides a rigid metal foundation that keeps them true and beautiful throughout the entire life of the building. While the cost of metal for this permanent, *firesafe* construction is slightly more than that of old-fashioned wood, its erection effects such savings in labor that in many instances these better homes are actually built for less.

Complete information on any of the MILCOR Metallic Building Products will be supplied promptly on request.

MILCOR ***Expansion*** *Metal Trim*
MILCOR ***Expansion*** *Corner Bead*
MILCOR ***Expansion*** *Base Screed*
MILCOR ***Invisible*** *Picture Molding*
MILCOR ***Netmesh*** *Metal Lath*
MILCOR ***Stay Rib*** *Metal Lath*

Milwaukee Corrugating Company
Milwaukee · Kansas City · Minneapolis



MILCOR *Expansion* Corner Bead for inside corners is placed directly over the lath, the plaster keying through both for great strength and rigidity. The straight metal edge provides a perfect guide for the workmen, assuring true walls for more beautiful rooms. The expanded metal construction dissipates stresses and prevents cracking of the plaster. This is one of the MILCOR metallic products for better buildings.

MILCOR
METALLIC BUILDING PRODUCTS

SONNEBORN PRODUCTS

Architects Are Weary Of "Paint Talk"

Yet they always welcome real information about paints.

Cemcoat applied to a board tells its own story.

Write for free sample board today. Examine the glistening tile like surface and see for yourself why Cemcoat reflects all the light and is so easily washed without injury.

Cemcoat

The Industrial Enamel Paint

shows these definite facts which admit of no argument.

Our laboratory tests extending over a year's time included panels painted with the best known enamel paints. Cemcoat resisted wear and the tendency to turn yellow longer than any other. In application it covered more surface per gallon.

All tints and colors: Gloss, Eggshell and Flat.

OTHER SONNEBORN PRODUCTS:

LAPIDOLITH—the liquid chemical which makes concrete floors dustproof and wearproof. Write for reference near you.

HYDROCIDE No. 648—Which renders concrete foundation walls and footings waterproof and dampproof.

HYDROCIDE No. 633—Which makes the inner surface of exposed walls dampproof.

HYDROCIDE, COLORLESS—A transparent liquid compound for waterproofing exposed exterior masonry walls, copings, parapet walls, etc.

HYDROCIDE INTEGRAL—For waterproofing mass concrete, stucco and mortars. It is incorporated in the mix, in powder and paste form.

LIGNOPHOL—The modern wood preservative, gives new life to old or new wooden floors.

STORMTIGHT—A liquid roof coating for all kinds of worn or new roofs. Stops and prevents leaks and lasts for years.

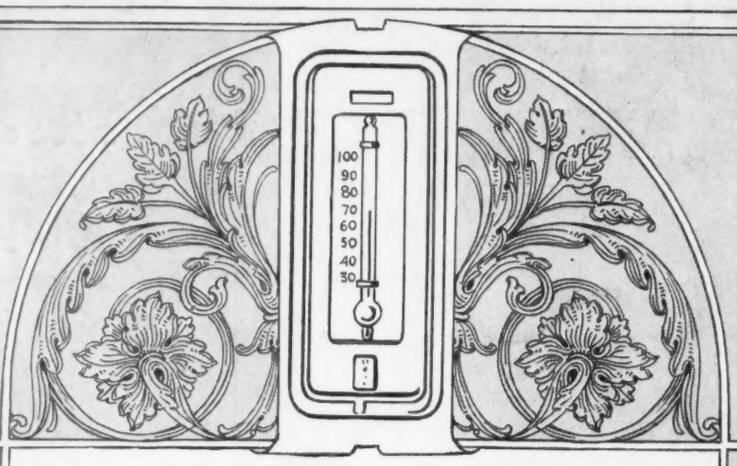
FERMO—Accelerates the setting of concrete to such an extent that it effects considerable saving in time and money even in warm weather. In cold weather it *saves the concrete from freezing.*

L. SONNEBORN SONS, INC.

116 FIFTH AVENUE DEPT. 50 NEW YORK

SONNEBORN

Printing of Pencil Points by The Gillespie Bros., Inc., Stamford, Connecticut



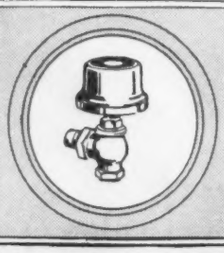
The Architect Of Finer Residences

THE rich luxury of correct and uniform temperature comfort, the relieving convenience of reliable automatic temperature regulation, and the strict economy maintenance of fuel consumption are three definitely accomplished reasons why The Johnson Pneumatic System Of Temperature Regulation has positive place in every fine residence designed today. Johnson present refinements of apparatus, wall thermostats and radiator valves fit in and harmonize with the other appointments so choicely characterizing finer homes. And the finally faultless, perfect performance of The Johnson System settle every element even of doubt as to results, satisfaction, gratification. Today automatic temperature regulation for residences, with The Johnson System perfected as it is, becomes expedient. The architect of finer residences is asked to realize that fact.

Johnson Service Company

Milwaukee

AUTOMATIC TEMPERATURE REGULATION FOR 37 YEARS
26 BRANCHES — UNITED STATES AND CANADA



Printing of Pencil Points by The Gillespie Bros., Inc., Stamford, Connecticut